## RESEARCH MEMORANDUM

EFFECTS OF OPERATING PROPELLERS ON THE WING-SURFACE
PRESSURES OF A FOUR-ENGINE TRACTOR AIRPLANE CONFIGURATION HAVING A WING WITH 40° OF SWEEPBACK

By Carl D. Kolbe and Frederick W. Boltz

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# NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

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#### RESEARCH MEMORANDUM

EFFECTS OF OPERATING PROPELLERS ON THE WING-SURFACE

PRESSURES OF A FOUR-ENGINE TRACTOR AIRPLANE CONFIGURATION HAVING A WING WITH 40° OF SWEEPBACK

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#### SUMMARY

An investigation has been made to evaluate the effects of operating propellers and of nacelles on the wing-surface pressures on a semispan model of a four-engine tractor airplane configuration having a wing with 40° of sweepback and an aspect ratio of 10. The model represented the right-hand side of the airplane and had single-rotation right-hand propellers. The tests were conducted at Reynolds numbers of 4,000,000 and 8,000,000 at low speed and at Reynolds numbers of 1,000,000 and 2,000,000 for Mach numbers from 0.60 to 0.90.

At high thrust coefficients and a Mach number of 0.082, the propeller slipstream caused large changes in the spanwise distribution of loading over the region of the wing immersed in the propeller slipstream. The strong rotational components within the slipstream were responsible for inflections in the spanwise distribution of loading, there being large increases with increasing thrust coefficient in the normal force of those wing stations behind the up-going propeller blades with relatively small changes for sections behind the down-going blades. Consequently, the center of pressure moved inward with increasing thrust coefficient. At high subsonic Mach numbers, the over-all effects of operating propellers were not large when compared with the low-speed case.

The section data indicate that for most subsonic Mach numbers the addition of the nacelles (propellers removed) caused an increase in the normal-force curve slopes and an increase in the angle of attack for zero section lift.

#### INTRODUCTION

The aerodynamic problems associated with long-range airplanes designed to fly at high subsonic speeds have been the subject of a series of investigations in the Ames 12-foot pressure wind tunnel. These investigations (refs. 1 to 8) have dealt with the aerodynamic characteristics of several combinations of the components of a hypothetical airplane configuration with a sweptback wing, including the effects of operating propellers on the longitudinal characteristics (refs. 7 and 8). Measurements of the distribution of pressure over the wing have been included in these studies to provide loads data and to facilitate an understanding of the local flow phenomena on the wing. Pressure-distribution data for the wing without nacelles have been presented and analyzed in reference 3.

The present report is concerned with the effects on the wing-surface pressures of operating propellers, as well as the effects of adding nacelles and an extended split flap. The results of pressure-distribution measurements at nine semispan stations of the wing are presented and analyzed in the present report.

#### NOTATION

8.	mean-line	designation,	fraction	of	chord	over	which	the	design
	load is	uniform							

 $\frac{b}{2}$  wing semispan, perpendicular to the plane of symmetry

b' propeller-blade width

 $C_{
m L}$  lift coefficient,  $rac{
m lift}{
m qS}$ 

 $\Delta C_{T}$  change in lift coefficient

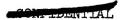
 $\Delta C_{\mathrm{Lg}}$  change in lift coefficient attributable to the propeller slipstream (based on the total lift of the model with propellers operating less the lift component of the direct propeller force)

C<sub>m</sub> pitching-moment coefficient about quarter point of the mean aerodynamic chord, pitching moment (See fig. 1(a).) qSc

 $\Delta C_m$  change in pitching-moment coefficient

change in pitching-moment coefficient attributable to the propeller slipstream (based on the total pitching moment of the model with propellers operating less the pitching moment due to the direct propeller force)

CX longitudinal-force coefficient, parallel to free-stream direction and positive in the dragwise direction, longitudinal force



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- c local wing chord, parallel to plane of symmetry
- c' local wing chord, perpendicular to the reference sweep line
- $c_{av}$  average wing chord, parallel to the plane of symmetry,  $\frac{2S}{b}$
- $\frac{1}{c} \qquad \text{mean aerodynamic chord, } \frac{\int_0^{b/2} c^2 dy}{\int_0^{b/2} c dy}$
- cl. wing-section design lift coefficient
- cm section pitching-moment coefficient, cn (0.25 c.p.)
- cn section normal-force coefficient, section normal force
- $\Delta c_{n_S}$  change in section normal-force coefficient attributable to the propeller slipstream
- c.p. section center of pressure
- D propeller diameter
- h maximum thickness of propeller-blade section
- J propeller advance ratio,  $\frac{V}{nD}$
- M free-stream Mach number
- n propeller rotational speed
- P pressure coefficient, P1 pq
- p, local static pressure
- p free-stream static pressure
- q free-stream dynamic pressure
- R Reynolds number, based on the wing mean aerodynamic chord
- R<sup>t</sup> propeller-tip radius
- r propeller-blade-section radius
- S area of semispan wing
- T thrust per propeller, parallel to air stream

CARDINIPERSONAL PROPERTY.

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air density

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thrust coefficient per propeller,  $\frac{T}{\rho V^2 N^2}$  $T_{C}$ section maximum thickness t V free-stream velocity lateral distance from the plane of symmetry У angle of attack of the wing chord at the plane of symmetry (referred to herein as the wing-root chord) angle of attack of the wing-root chord at the plane of symmetry,  $\alpha_{\rm U}$ uncorrected for tunnel-wall interference and angle-of-attack counter correction β propeller-blade angle, measured at 0.70 of the tip radius βľ propeller-blade-section angle δ flap angle, measured relative to the local chord in planes normal to the reference sweep line angle of twist, measured in planes parallel to the plane of φ symmetry, positive for washin fraction of semispan,  $\frac{2y}{k}$ η spanwise location of the center of pressure, fraction of semispan

#### MODEL

The semispan model represented the right-hand side of a hypothetical airplane. The geometry of the model is given in figure 1 and table I. The selection of the geometric properties and the details of the construction of the wing, fuselage, upper-surface fences, nacelles, and flaps have been discussed in references 1 through 4. Four upper-surface wing fences, as shown in figure 1(c), were used throughout the present investigation.

The wing was equipped with nine rows of pressure orifices on both the upper and lower surfaces (fig. l(c)). The orifices were distributed along the chord from the leading edge to the 95-percent-chord point and were staggered one-eighth inch on either side of the station planes. There were no orifices in the extended trailing-edge flap.

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Each propeller in the two different sets used in this investigation had three blades and right-hand rotation. The propellers used for the tests at high subsonic Mach numbers (M = 0.60 and above) were the NACA 1.167-(0)(03)-058 supersonic propellers. For the tests at low subsonic Mach numbers, a thicker propeller, the NACA 1.167-(0)(05)-058, was used to withstand the very high blade loadings that accompany low-speed, high-density, wind-tunnel operation. The characteristics of these propellers and details of the motor-gearbox combination used to drive them are given in reference 6. Blade-form curves of the propellers are presented in figure 2 of this report.

Figure 3 is a photograph of the model mounted in the wind tunnel. The turntable upon which the model was mounted is directly connected to the force-measuring apparatus.

#### TESTS

The pressure-distribution data presented in this report were obtained simultaneously with the wind-tunnel balance measurements of the total lift, longitudinal force, and pitching moment on the model. Tests were made with the propellers operating and with the propellers removed, covering the range of conditions indicated in table II.

With the propellers operating, the Mach number, Reynolds number, and angle of attack were maintained constant while data were obtained at several selected thrust coefficients, T<sub>c</sub>. Selection of the propeller rotational speeds to provide these thrust coefficients was based upon a previous propeller calibration in which the thrust characteristics of the propeller in the presence of the spinner and nacelle forebody were measured for the range of test conditions covered in tests of the complete model (see ref. 6). The results of the calibrations of the two different propellers that are pertinent to this report are presented in figures 4 and 5.

#### CORRECTIONS

The dynamic pressure, Mach number, and pressure coefficients have been corrected for constriction effects due to the presence of the tunnel walls by the method of reference 9. The force data have been corrected for tunnel-wall-interference effects originating from lift on the model and for drag tares caused by aerodynamic forces on the exposed portion of the turntable on which the model was mounted. The corrections that were applied to data obtained with propellers operating were the same as those reported in references 7 and 8. The corrections used



for the configuration with propellers removed are given in references 2 and 5.

The pressure data and the coefficients derived therefrom are presented in this report for values of uncorrected angle of attack  $\alpha_U$ . The relation between the corrected and uncorrected angle of attack is as follows:

$$\alpha = 0.99 \alpha_0 + \Delta \alpha$$

The constant 0.99 is the ratio between the geometric angle of attack and the uncorrected reading of the angle-of-attack counter. The correction for the tunnel-wall interference is  $\Delta \alpha$ , and is defined as follows:

$$\Delta \alpha = 0.377 C_{Lwing}$$

where

$$C_{Lwing} = C_{Ltotal} - \Delta C_{Lp}$$

and  $\Delta C_{Lp}$  is the increment of lift coefficient due to propeller thrust and propeller normal force (obtained during the tests reported in ref. 6).

#### RESULTS AND DISCUSSION

The results of this investigation include a considerable amount of data obtained with the propellers removed, many of which serve as a base for comparison with comparable data obtained with propellers operating. It is convenient, therefore, to defer discussion of the effects of operating propellers until the propellers-off data have been presented and discussed. The latter data include the effects of nacelles and of an extended trailing-edge flap on both the local wing pressures and on the coefficients of lift, drag, and pitching moment.

Tabulated pressure data for nine spanwise stations of the wing (with and without operating propellers) are presented in tables III through XIX. Table II is an index to these data.

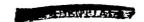
A portion of the lift, longitudinal-force, and pitching-moment data at Mach numbers of 0.86 and 0.90 were faired with dotted curves to indicate data obtained under conditions in which the wind tunnel may have been partially choked. It is to be understood that the corresponding pressure data fall within the same limitations of reliability.



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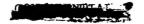
#### Effects of Nacelles (Propellers Off)

Low speed. - The chordwise distributions of pressure coefficient in the region of the nacelles for a Mach number of 0.165 and a Reynolds number of 8,000,000 are compared with those of the wing-fuselage configuration (ref. 3) in figure 6. The corresponding coefficients of section normal force and section pitching moment, and of the total lift, longitudinal force, and pitching moment are presented in figure 7. The data in figure 6 indicate an increase in velocity over the lower surface of those stations in the vicinity of the nacelles. This increase in velocity became smaller with increasing angle of attack. As can be seen in figure 7, these velocity changes contributed to a reduction in the section loading for low angles of attack, an increase in the slopes of the lift and section normal-force curves, and an increase in the angle of attack for zero section lift. References 10 through 12 indicate the same effects for similar configurations. Data obtainable from table XV indicate that this effect diminished toward the wing tip. Further inspection of figure 6 reveals that, with the addition of nacelles to the wing, flow separation occurred on the upper surface at a lower angle of attack, with the attendant decrease in lift-curve slope and increase in drag (fig. 7).

The effect of the nacelles on the spanwise distribution of loading coefficient is shown in figure 8. The general nature of the inflection in the spanwise distribution of loading due to the nacelles is discernible; however, lack of pressure data over the nacelles prevents an accurate estimate of the changes in the location of the spanwise center of pressure. It is apparent, though, that such changes were small.

High speed.— The effects of the nacelles on the over-all force characteristics and section characteristics for Mach numbers ranging from 0.60 to 0.90 and a constant Reynolds number of 2,000,000 are shown in figures 9 through 12, respectively. Cognizance should be taken of the difference in Reynolds number between this and the preceding section. It was noted in reference 3 that for a Mach number of 0.25 the effect of this same change in Reynolds number was not large. A cross plot of the section normal-force data from these figures is presented in figure 13 as a function of Mach number.

In general, the effects of the addition of the nacelles for a Mach number of 0.60 were similar to those at low speed. The effects of increasing Mach number, however, were to reduce slightly the effect of the nacelles on both the section normal-force curve slopes and the angle of attack for zero lift.



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#### Effects of Flaps

The effects of an extended trailing-edge flap ( $\delta = 30^{\circ}$ ) on the over-all force characteristics and on the section characteristics of the wing-fuselage-nacelles combination at a Mach number of 0.082 and a Reynolds number of 4,000,000 are shown in figure 14. Since no pressure measurements were made over the flap itself, estimates of the chordwise pressure distributions, similar to those shown in figure 15, were used to obtain the section coefficients. The effects of the flaps on the spanwise distribution of loading are shown in figure 16. It is evident that the flaps not only caused large increases in normal forces at those sections within the flap span ( $\eta = 0.07$  to  $\eta = 0.46$ ) but also caused substantial increases in loading over the outer portion of the wing. The center of pressure obviously moved inward a considerable distance when the flaps were deflected (fig. 16). Reference to figure 14(c) reveals that there was a large rearward movement of the section center of pressure in the region of the flaps. These changes had little effect on the wing pitching moments (fig. 14(a)).

#### Effects of Operating Propellers

Low speed. - The effects of operating propellers on the chordwise distribution of pressure coefficient in the region of the nacelles at a Mach number of 0.082 and a Reynolds number of 4,000,000 are shown in figure 17. The corresponding over-all force characteristics and section characteristics are shown in figure 18. Inspection of the data in figure 17 reveals that at the highest thrust coefficients ( $T_c = 0.8$ ) the pressure distributions changed radically from those which existed with the propellers operating at  $T_c = 0$  or with the propellers removed. Furthermore, increasing Tc also caused large changes in the stagnation pressure at the leading edge. Figure 18(b) shows that the propeller slipstreams caused large changes in the section normal-force coefficients and that those changes were not symmetrical over the portion of the wing immersed in the slipstreams as would be expected from simple axial-momentum theory. The asymmetrical effects of the operating propellers are further illustrated in figure 19 wherein the change in section normal-force coefficient due to propellers, Δcns, is shown as a function of Tc. It may be seen that there were large increases in  $\Delta c_{ns}$  with increasing  $T_c$  at wing stations behind the up-going propeller blades (stations  $\eta = 0.19$  and  $\eta = 0.44$ ) at all angles of attack from 40 to 160. At wing stations behind the down-going 1 Cognizance should be taken of the fact that the total force and moment data in this and later similar figures include the effects of the pro-

Cognizance should be taken of the fact that the total force and moment data in this and later similar figures include the effects of the propeller thrust and propeller normal force as well as the effects of the propeller slipstream. (See refs. 7 and 8.)

propeller blades ( $\eta=0.31$  and  $\eta=0.56$ ),  $\Delta c_{\rm ns}$  decreased with increasing  $T_{\rm c}$  at angles of attack below about  $8^{\rm o}$  and increased only slightly with increasing  $T_{\rm c}$  at higher angles of attack. These effects are indicative of the strong rotational components within the slipstream which change the effective angle of attack of the wing sections immersed in the propeller slipstream.

Figure 20 shows the effect of operating propellers on the spanwise distribution of the loading coefficient  $c_n \frac{c}{c_{av}}$  for several angles of attack. The pronounced distortion of the spanwise distribution of load associated with increasing  $T_c$  is apparent. The effect of propeller operation on the spanwise center of pressure  $\eta_{c.p.}$  is shown in figure 21. These data were obtained by integrating the loading data presented in figure 20, utilizing a straight-line fairing between the data points adjacent to the nacelles. The center of pressure moved inward with increasing  $T_c$ , the amount decreasing as the angle of attack was increased to  $12^{\circ}$ .

Figure 22 shows the importance of these aforementioned pressure-distribution changes with regard to the changes in the total lift and pitching-moment coefficients attributable to the operating propellers. It can be seen that the lift due to the propeller slipstream ( $\Delta C_{L_B}$ ) accounted for about 60 percent of the total change in lift with varying angle of attack; whereas the slipstream contribution to the change in pitching moment ( $\Delta C_{m_B}$ ) was apparently unaffected by increasing angle of attack.

High speed.— The effects of the operating propellers on the over-all force characteristics and section characteristics for Mach numbers from 0.70 to 0.90 for a constant Reynolds number of 1,000,000 are presented in figures 23 to 26. It is evident from the data in these figures that the effects of the operating propellers were not large compared to the propeller effects for the low-speed case. This is a consequence of the fact that the thrust coefficient is decreased considerably for the same power input.

The effects of increasing  $T_{\rm c}$  on the chordwise distribution of pressure in the region of the nacelles are shown in figure 27 for a Mach number of 0.80. At the higher angles of attack, the apparent increase in pressure recovery for those stations between the nacelles might have been due to an increase in stagnation pressure caused by the operating propellers.

As indicated in figure 28, the effects of slipstream rotation at a Mach number of 0.80 on the spanwise distribution of loading were much less pronounced than in the previously cited low-speed case due to the lower values of thrust coefficient.



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#### CONCLUDING REMARKS

Measurements of the surface pressures and forces on a semispan model of a wing-fuselage-nacelles combination representing the right-hand side of a hypothetical four-engine airplane have been presented. The effects of single-rotation right-hand propellers, of nacelles, and of extended trailing-edge flaps on the wing-surface pressures have been discussed.

At high thrust coefficients and a Mach number of 0.082, the propeller slipstream caused large changes in the spanwise distribution of loading over the region of the wing immersed in the propeller slipstream. The strong rotational components within the slipstream were responsible for inflections in the spanwise distribution of loading, there being large increases with thrust coefficient in the normal force of wing sections behind the up-going propeller blades with relatively small changes for sections behind the down-going blades. As a result, the center of pressure moved inward with increasing thrust coefficient.

At high subsonic Mach numbers, the over-all effects of operating propellers were not large when compared with the low-speed case for the same power input; this is a direct consequence of the large reductions in thrust coefficient with increases in free-stream velocity.

The addition of the nacelles to the plain wing (propellers removed) increased the velocity over the lower surface at those stations in the vicinity of the nacelles. These velocity changes contributed to an increase in the slopes of the lift and normal-force curves and a general increase in the angle of attack for zero lift.

Deflection of extended trailing-edge flaps ( $\delta = 30^{\circ}$ ) over the inner 46 percent of the wing semispan (propellers removed) produced substantial gains in section lift over the complete semispan. The wing pitching moments were little affected by the flap deflection.

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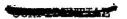
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#### TABLE I .- GEOMETRIC PROPERTIES OF THE MODEL

Wing
Reference sweepline: locus of the quarter chords of sections inclined 40° to the plane of symmetry
Aspect ratio
Nacelles Frontal area (each)
Inclination (with respect to wing root chord) Inboard
Propellers
Diameter
For low speed tests $\cdot$

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TABLE I. - GEOMETRIC PROPERTIES OF THE MODEL - Concluded

Fuselage	-		
Fineness ratio Frontal area (semia Fuselage coordinate		• • • • •	0.273 ft <sup>2</sup>
	Distance from nose, in.  0 1.27 2.54 5.08 10.16 20.31 30.47 39.44 50.00 60.00 70.00 76.00 82.00 88.00 94.00	Radius, in. 0 1.04 1.57 2.35 3.36 4.44 4.90 5.00 5.00 5.00 5.00 4.96 4.83 4.61 4.27	
	94.00 100.00 106.00 126.00	4.27 3.77 3.03	

TABLE II.- INDEX OF TABULATED PRESSURE COEFFICIENTS

Table No.	R × 10 <sup>-6</sup>	М	Tc	Configuration	$\alpha_{\mathrm{u}}$	range
Table No.  III IV VII VIII IX X XI XIII XIV XV XVI XVI	1.0 0.00000	0.082 80.80 90.082 80.90 165.80 90.165	Tc 0 .2 .4 .6 .8 0 .04 0 .03 Props off	Wing-fuselage-nacelles	200000000000000000000000000000000000000	to 16°  10°  10°  10°  10°  10°  10°  10°
XIX	8.0 4.0	.165 .082	1	Wing-fuselage Wing-fuselage-nacelles plus extended split trailing-edge flap	-2° t	50 20 <sup>0</sup> 50 20 <sup>0</sup>

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TABLE III.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING.  $M = 0.082; R = 4.000,000; T_c = 0$  (a)  $\alpha_1 = 2^{\circ}, 4^{\circ}, 6^{\circ}, 8^{\circ}, 10^{\circ}, 12^{\circ}$ 

	Per-				mriace_					Lower	surface		
Spenwise stations	cent			Angle o	f sttack					Angle o	attack		150
0.10 b/2	0 1.5 1.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 90.0	8 55484555888884455	0.56 -36 -37 -53 -51 -51 -39 -39 -39 -30 -20 -06	0.42 -73 -755 -69 -59 -514 -37 -33 -33 -35 -35 -35 -35 -35 -35 -35 -35	8° 0.13 -1.14 -1.0396837570595136292207	10° -0.30	19 - 0 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8 1 8	0.05	0.309   0.005 95 95 95 95 95 95 95 95 95 95 95 95 95	8 1950	80 0.43 0.43 0.84 0.80 0.00 0.00 0.00 0.00 0.00 0.00	100 0.66 0.57 37 29 24 13 11 11 11 10 04	18 0.64 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19
0.19 b/2	0 1.5 7.0 15.0 15.0 20.0 15.0 20.0 70.0 70.0 70.0 70.0	6. 23.34.85. 14.83.88.28.88.88.88.88.88.88.88.88.88.88.88.	- 49 - 49 - 40 - 40 - 40 - 40 - 40 - 40 - 40 - 40	-12 -1.22 -1.06 94 87 77 78 50 43 35 21 09 01	49 -1.84 -1.15 -1.16 -1.09 92 68 55 44 37 30 20 01	-1.45 -2.61 -1.70 -1.48 -1.33 -1.11 74 61 49 41 31 20 08	*539 *539 *539 *539 *539 *539 *539 *539	08 31 35 35 29 15 06 01	.13 .20 .01 .11 .18 .11 .01	.59 .42 .00 .00 00 00 01 .01	.61 .56 .56 .38 .21 .02 .01 .03 .05	.50 .64 .52 .24 .11 .07 .06 .08	.63 .51 .51 .77 .21 .14 .09
0.31 10/2	0 1.50 7.00 15.00 20.00 40.00 70.00 70.00 95.00	111111111198 113543333333333598 1111111111110	50 63 63 61 57 49 39 39 32 88 01	.34 92 94 89 83 79 77 57 31 31 24 09	.03 -1.42 -1.28 -1.17 -1.02 93 87 57 49 39 33 23 06	- 4.05 - 4.05 - 4.26 - 5.26 -	-1.02 -2.69 -2.69 -2.73 -1.51 -1.30 -1.87 73 73 73 73 73 73 73 7	.09 22 28 24 21 16 11	.85 83 11 11 10 06	.48 .26 .08 .02 0 02 04 04	.82 .14 .23 .13 .12 .88 .05 .05	.15.36	.72 .70 .49 .37 .37 .25 .20 .16 .13
0.375 b/2	0 1.5 4.0 70.0 15.0 20.0 30.0 50.0 780.0 90.0	534394355   35564866   1   1   1   1   1   1   1   1   1   1	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	-19 -1.20 -1.00 97 88 80 72 43 35 20 05	- 41 -1.89 -1.37 -1.25 -1.15 -1.00 89 50 40 31 21 05	-1.33 -2.76 -1.87 -1.61 -1.20 -1.05 53 32 05	2.57 -2.59 -2.39 -1.70 -1.40 -1.75 -3.5 -3.5 -3.5 -3.5 -3.5 -3.5 -3.5 -3.	ଓର୍ଗ ର୍ଶ୍ୱରଥି   ୭୯ ବିହ	#8   04.9.9.9.9.5.   5.5.	.52 .31 .08 .05 .01 .01 .04 .05	.58 .27 .23 .14 .09 .07 .06	.51 .57 .31 .36 .16 .16 .13	360 1 51 22 368 84 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
0.44 B/2	0 1.50 7.0 10.0 15.0 20.0 30.0 30.0 50.0 70.0 80.0 95.0	638999999999999999999999999999999999999	.49 79 76 79 60 53 35 35 35 35 35 35	-1.43 -1.17 -1.99 51 51 51 52 53 53 53 53 53 53 53 53	-81 -2.17 -1.56 -1.39 -1.22 -1.01 97 58 47 39 29 20 05	-2.06 -3.10 -2.09 -1.78 -1.72 -1.23 -1.04 63 51 40 29 17 01	7794417988951191690	24 30 30 36 29 19 11 05 .01	.46 .22 .02 09 16 17 13 06 01 .04		-759 -59 -59 -42 -27 -17 -06 -03 -04 -05 -07 -04 -03	.32 .64 .56 .43 .32 .16 .10 .10 .10 .10	-10 -59 -67 -56 -46 -27 -18 -15 -14 -14

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TABLE III.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000;  $T_c = 0$  - Continued (a)  $\alpha_u = 2^{\circ}$ ,  $4^{\circ}$ ,  $6^{\circ}$ ,  $8^{\circ}$ ,  $10^{\circ}$ ,  $12^{\circ}$  - Concluded

	Per-				surface						Lower	surface		
Spanwise	cent				f attack			1				f attack		
stations	chord	50	140	60	80	100	120	Ш	50	Ťo	్	80	100	120
0.56 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	49554985584855 0111111111111111	0.48 59 62 57 57 35 46 37 35 24 18 06	0.31 93 90 81 85 88 88 88 88 80 00	-0.03 -1.48 -1.29 -1.03 57 57 57 53 32 05	-0.61 -2.14 -1.70 -1.87 -1.32 -1.13 94 76 63 53 32 06	######################################		୍ର ବିଷ୍ଟ୍ର ବିଷ୍ଟ ବିଷ୍ଟ ବିଷ୍ଟ ବିଷ୍ଟ୍ର ବିଷ୍ଟ୍ର ବିଷ୍ଟ	10 10 11 11 09 07	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.63 .41 .82 .44 .10 .05 .05 .05 .05 .05 .05	0.70 .56 .36 .82 .15 .11 .10	0.72 68 88 57 53 20 27 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
0.68 b/2	0 140 200 200 200 200 200 200 200 200 200 2	ំ មិន និង និង និង និង និង និង និង និង និង ន	-54 -36 -57 -57 -57 -57 -59 -39 -34 -21 -21 -01	.33 95 88 88 55 49 49 49 49 49 49 49 49	1994888885888595	-1.08 -2.40 -1.87 -1.53 -1.35 -1.36 -1.00 -826472382715	न्त्री त्राप्त		\$85.50 S.508.50 S.508	.03 .04 .08 .08 .08 .08 .08 .08 .08 .08 .08 .08	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	\$5.4 86.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1	388887 154499	HR   495564   199598
0.80 ъ/2	0 1.5 4.0 7.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	385248828888842388	-53 -36 -50 -50 -50 -50 -50 -50 -50 -50 -50 -50	ର ଅନ୍ତର ଜଣ ନଥିଲି । ଜଣ ନଥିଲି ଓଡ଼ିଆ ନଥିଲି । ଜଣ ନଥିଲି ଓଡ଼ିଆ ନଥିଲି । ଜଣ ନଥିଲି ।	## ## ## ## ## ## ## ## ## ## ## ## ##	######################################	-2.73 -3.30 -2.80 -1.81 -1.56 -1.88 -1.86 88 88 88 88 38 38 11 03		1 28 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	্র পূর্ব নির্দ্ধ নির নির্দ্ধ নির্দ্ধ নির্দ্ধ নির্দ্ধ নির্দ্ধ নির্দ্ধ নির্দ্ধ নির্দ্ধ	.56	.36 .28 .24 .24 .15 .13 .11	.27 .57 .57 .39 .33 .25 .18 .17 .13 .10
O.94 ъ/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	0.38 .16 04 15 20 22 25 25 21 21 21 14 10	0.56 18 31 40 39 39 35 31 26 22 16 11	\$6000000000000000000000000000000000000	0 -1.18 -1.03 951 67 55 40 34 30 20	15.86 1-1-1-1-1-55.22 1-1-1-1-1-55.22 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	-1.81 -2.85 -1.85 -1.86 -1.86 -1.86 -1.86 -1.86 -1.86 -1.80 -1.80 -1.80 -1.90 -1.90		44 28 30 24 19 04 09 04 06 .06			3338,030,00,00,00	.53 .39 .29 .22 .18 .10 .09	.48 .39 .32 .24 .18 .11 .11



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TABLE III.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = \( \frac{1}{2},000,000; T\_c = 0 - Continued \) (b)  $\alpha_{tt} = 14^{\circ}$ , 16°

	Per-			Upper	urface				Lower	surface	
Spenvise stations	cent chord	140	16°	Angle of	attack		140	160	Argle o	f attack	
o.10 p/2	0 1.5 \$.0 7.0 10.0 15.0 20.0 30.0 \$0.0 50.0 60.0 70.0 80.0 90.0 95.0	145 -2.80 -2.80 -2.03 -1.68 -1.41 -1.20 -1.04 -83 -66 -53 -34 -31 -34 -31	47448463459975345999999999999999999999999999999				0.59 7.54 7.54 7.39 7.39 7.39 7.39 7.39 7.39 7.39 7.39	16 0.73 0.54.46.83.4.89.54 1.15			
0.19 <b>b/</b> 2	0 1.5 1.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	-3.97 -4.14 -2.73 -1.80 -1.41 87 56 43 30 57	-5.51 -5.02 -5.19 -2.01 -1.55 56 42 06 05				-09 -60 -52 -52 -49 -30 -19 -12 -04 -,02	78 77 77 78 78 78 78 78 78 78 78 78 78 7			
0.31 b/2	0 1.5 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 90.0 95.0	######################################	9.4 4.13 9.89 9.01 7.14 7.87 89 39 1.06 39 1.06				.68 .78 .79 .49 .41 .33 .27 .24 .18	\$5.55.54.88   8.15.17.17.17.17.17.17.17.17.17.17.17.17.17.			
0.375 7/2	0 1.5 4.0 7.0 10.0 20.0 20.0 30.0 40.0 50.0 80.0 90.0	74.51.38.88.36 -4.51.38.88.36 -1.68.88.88.88.88.88.88.88.88.88.88.88.88.	555464444 5554684 5644845				.01 .57 .58 .52 .44 .36 .29 .19 .19	-44 -47 -63 -57 -25 -43 -75 -15 -15 -15			
0.44 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	\$388\$16386848568 \$579977766	-7.60 -6.75 -6.75 -2.84 -1.46				-67 -49 -74 -67 -57 -38 -26 -20 -01	-1.38 .30 .76 .74 .87 .20 .19			

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TABLE III.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000;  $T_c$  = 0 - Concluded (b)  $\alpha_u$  = 14°, 16° - Concluded

	Per-			Upper	surface	 			Lower	surface	 
Spanwise	cent				of attack				Angle	of attack	 
0.56 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0	14° -2.18 -3.58 -2.57 -2.16 -1.85 -1.53 -1.53 -1.59 -816450372506	16° -3.19 -4.38 -3.04 -2.51 -2.13 -1.73 -1.42 -1.1087534026	angle (			140 0.65 .77 .78 .50 .41 .32 .28 .24	160 0.50 .79 .66 .56 .50 .40 .34 .33	Angre		
0.63 b/2	95.0 0 1.50 10.0 10.0 20.0 20.0 20.0 70.0 80.0 90.0	5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5	0 -5.55 -5.65 -2.75 -2.32 -1.86 -1.55 -1.15 -39 -1.15 -1.10 -1.11				.11 02 .56 75 .41 .32 .28 .29 .17 .11	-50 -46 -58 -53 -39 -33 -25 -25 -29 -19 -05			
0.80 b/2	0 1.5 4.0 7.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 90.0	# \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	-6.07 -4.92 -4.57 -4.57 -4.71 -1.39 -1.39 -1.26 -1.26 -1.26 -1.26 -1.26 -1.26 -1.26 -1.26 -1.26 -1.26				.10 .56 .53 .48 .39 .30 .22 .20 .16 .14	-29 .48 .56 .54 .36 .24 .20 .15 .10			
o.94 ъ/2	0 1.5 10.0 15.0 20.0 30.0 50.0 70.0 70.0 90.0	7.85 -4.85 -4.86 -1.89 -1.77 -7.77 -3.80 -1.05 -1.05	10000000000000000000000000000000000000				.25 .52 .45 .38 .30 .23 .16 .14	-,04 -,55 -,50 -,43 -,36 -,26 -,26 -,20 -,05 -,01 -,04			



	Per-				surface .						Lower a			
Spanwise stations	cent	-0.	10		f attack	7.00	700	I	00 1	LO I		e attack	100	120
0.10 b/2	0 1.5 1.0 10.0 15.0 15.0 50.0 50.0 50.0	80 2448888848848248488888888888888888888	**************************************	8 34548888358484838 845 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	80000000000000000000000000000000000000	9 - \$P\$20508288243858 888	3 ተቀተተተተተነ ( ( ) ( ) ነት የ		0.089 	0.34 02 0 0 0 0 0 03 01 01 03 03 03 04 03	6° -0.53 -33 -18 -19 -119 -55 -55 -55 -55 -55 -84	8°	10°	12°
0.19 ъ/2	*.0 7.0 15.0 20.0 30.0 50.0 70.0 80.0 95.0	୬୫୫୫   ୨୫୫୫୫୭ ୧	6582 STANKS88	\$446 64788869 1111111	-1.91 -1.55 -1.40 -1.15 61 89 39 32 06	-2.50 -1.97 -1.73 -1.39 66 53 42 33 21 06	99755   %FR.55866		**   88   88   88   88   88   88   88	2   %3   48   45   88	ද් මුක්ෂිජ්ප් ස්පූ   දිලි	.69 .43 .83 .67 .05 .06 .11	.87 .60 .38 .15 .14 .11 .16	1.03 .76 .51 .26 .18
0.31 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 90.0	80 E 8 2 E 8 E 8 E 8 E 8 E 8 E 8 E 8 E 8 E	388848F48888888888888888888888888888888	84 	.73 99 -1.14 -1.09 -1.04 99 89 70 36 36 36 36	-1.59 -1.59 -1.58 -1.19 -1.66 84 40 40 40	44444444444444444444444444444444444444		-50 -61 -53 -50 -36 -36 -36 -36 -36 -19 -19 -19	6 % % % % % % % % % % % % % % % % % % %	.80 -09 -09 -08 -08 -05 -08 -05 -08 -05 -08 -05 -08 -05 -05 -05 -05 -05 -05 -05 -05 -05 -05	.88	.86 .53 .25 .13 .14 .12 .11	1.04 .74 .41 .27 .26 .21 .19 .16 -15 .15
0.37 <b>5</b> b/2	0 1.57 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	500 345 - 136 - 13	5315569855 - 555- 47169465	.20 -1.91 50 84 78 74 54 37 30 30	- 43 -1.83 -1.82 -1.21 -1.00 - 59 - 52 - 34 - 24 - 08	-1.43 -2.74 -1.86 -1.63 -1.42 -1.07 74 59 39 39 36 10	-2.37 -2.37 -1.45		09 24 24 21 20 15 05 06 .08	.29 .09 .09 04 05 05 05 05 05	.53 .35 .19 .12 .09 .05 .04 .06 .07	.59 .52 .36 .27 .22 .15 .11 .11 .12	.50 .60 .88 .33 .25 .20 .16 .15	.27 .61 .57 .47 .43 .32 .29 .21 .20
0.44 7/2	0 1.5 1.0 10.0 15.0 20.0 30.0 50.0 50.0 60.0 70.0 80.0 90.0	1.00 63 72 66 61 75 48 40 33 27 22 16 03	.63 -1.33 -1.10 -1.97 93 83 71 59 47 39 25 16 06	19180444555158488355	-1.12 -7.12 -7.136 -1.56 -1.56 -1.89 -1.89 -1.89 -1.89 -1.89 -1.89 -1.89 -1.89 -1.89 -1.80	-2.79 -4.85 -2.86 -1.98 -1.98 -7.38 -1.29 -7.38 -1.35	-1.43 -5.43 -5.50 -2.83 -2.79 -1.48 -1.88 -1.86 -1.50		.63 .26 .28 .19 .30 .30 .30 .30 .30 .05 .06	.93 .60 .29 .06 80 15 09 02 .04 .10	1.04 .86 .5* .30 .12 .02 0 .0* .07 .11	.97 1.03 .75 .52 .32 .12 .09 .09 .11	.73 1.13 .95 .89 .23 .15 .14 .15 .18	1.21 1.13 .86 .87 .24 .19 .18 .20



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TABLE IV.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000;  $T_c$  = 0.2 - Continued (a)  $\alpha_u$  = 2°, 4°, 6°, 8°, 10°, 12° - Concluded

	Per-			Upper	surface			Т	T		Lower	murface		
Spanwise stations	cent			Angle	of attack			1			Angle	of attack		***************************************
S CALCIONIS	chord	20	40	6°	80	10°	12°	1	20	10	6°	80	100	120
0.56 b/2	0 1.5 4.0 7.0 10.0 20.0 30.0 40.0 50.0 60.0 80.0 90.0	9.25253555555552227056 	0.77 43 57 57 57 58 48 36 26 26 20 05	0 1 1 7 8 4 8 T 5 5 5 5 5 5 8 8 8 8 8 8 8 8 8 8 8 8	0.4444	0.49 1.65 1.49 1.20 1.20 1.20 1.30 1.30 1.30 1.30 1.30 1.30 1.30 1.3	0.15 0.44 0.88 0.44 0.88 0.44 0.88 0.44 0.88 0.44 0.44		-0.66 -77 -50 -48 -36 -21 -01 -01 -03 -03	-0.15 -37 -35 -35 -35 -35 -27 -13 -13 -01 -03	0.29 05 18 17 15 09 07 07	0.66 .23 .08 .05 .05 .05 .08 .09 .14	0.78 .46 .13 .11 .09 .07 .06 .06	1.07 .67 .24 .19 .13 .14 .13
o.68 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 90.0 95.0	3.4.5.48888888899999999999999999999999999	.56 50 52 50 50 50 30 34 30 31 30 31	.38 90 84 76 72 55 45 30 22 101	1.56 1.56 1.59 1.59 1.59 1.59 1.59 1.59 1.59 1.59	1.18 -2.48 -1.89 -1.36 -1.19 -1.82 -1.04 -1.51 -1.04 -1.51 -1.04 -1.51 -1.04 -1.04	\$\$\$\$%*\$\$\$\$\$\$\$\$\$\$\$\$		- 39 - 39 - 39 - 39 - 39 - 39 - 39 - 39	18 	.47 .26 .05 .04 .08 .08 .08	.57 .45 .27 .20 .16 .12 .12 .12 .12	.49 .54 .40 .37 .27 .21 .19 .15 .15	.26 .58 .51 .42 .36 .23 .23 .18 .15 .10
o.80 b/2	0 1.50 7.00 7.00 150.00 20.00	\$2555555555555555555555555555555555555	5844444448468891866 1111111111111111111111111111111	30082228654428832545	1798998878514385598 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	1.79 1.75 1.79 1.79 1.79 1.79 1.79 1.79 1.79 1.79	43.44 43.44 44.44 1.53 1.53 1.58 1.58		18831 882777 105555599	9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- 146.26 - 115.85.55 - 15.85.55 - 16.85.85 - 16.85.85 - 16.85.85 - 16.85.85 - 16.85 -	.58 .44 .26 .20 .16 .13 .11 .11 .11 .10	.52 .53 .38 .89 .26 .26 .20 .15 .15	-33 .57 .49 .40 .34 .27 .27 .20 .15 .13
0.94 B/2	0 1.5 4.0 7.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 90.0	.35 .19 01 16 20 21 21 20 21 20 21 20 21	-56 -29 -37 -36 -37 -38 -24 -21 -21 -21 -20 -30 -30 -30 -30 -30 -30 -30 -30 -30 -3	#63888万大工士 #8888日 6 日日   1   1   1   1   6	9 H8 6 4 5 1 1 1 1 1 1 1 6 6 6 6 6 6 6 6 6 6 6 6	-86 -2.45 -1.45 -1.06 -1.54 -1.54 -1.36 -1	-1.96 -2.28 -1.57 -1.57 -1.57 -1.57 -1.57 -1.50		- 47 - 27 - 29 - 29 - 19 - 19 - 19 - 19 - 19 - 19 - 19 - 1	0   0   0   0   0   0   0   0   0   0	.34 .34 .06 .06 .01 .03 .03 .08 .09 .10	.51 .89 .14 .19 .66 .67 .68 .68	.53 .40 .32 .23 .19 .13 .10 .09 .08	**************************************

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TABLE IV.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R =  $^14$ ,000,000; T<sub>c</sub> = 0.2 - Continued (b)  $\alpha_u$  =  $^14^\circ$ ,  $^16^\circ$ 

	Per-			Upper	surface	 			Lower	surface	 
Spanvise stations	cent				f attack					of attack	
5	chord	140	16°				Iko	160			
0.10 <b>b/</b> 2	0 1.5 4.0 7.0 15.0 20.0 30.0 40.0 50.0 60.0 60.0 90.0	474444798825488218	2.72 2.77 2.77 2.77 2.77 2.77 2.77 2.77				0.5k -73 -63 -54 -46 -38 -38 -29 -25 -21	0.74   68.53.58.48.88.6   14.58			
0.19 b/2	0 H 4 7 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	388866 88488488	6.55.75.55%   68.65.85.75.85%   68.65.85.75.85%   68.65.85.75.85%   68.65.85.75.85%   68.65.85.75%   68.65.85.75%   68.65.85.75%   68.65.85.75%   68.65.85.75%   68.65.85.75%   68.65.85.75%   68.65.85.75%   68.65.85.75%   68.65.85%   6				1.18 .86 .84 .36 .26	38 86 7.7.1.22 3.25 1.35 1.39			
0.31 b/2	0 1.5 10.0 15.0 15.0 15.0 15.0 15.0 15.0	14848864319479779473869	**************************************				1.20 .92 .54 .40 .36 .31 .26 .25	1.20 1.20 1.20 1.20 1.20 1.20 1.20 1.20			
0-375 b/2	0 1.5 4.0 7.0 15.0 20.0 30.0 \$0.0 70.0 80.0 90.0 95.0	238 238 44.86 34.066 44.90 46.90 46.	-5.63 -5.43 -7.86 -1.86 -1.87 -1.77 -1.77 -1.77 -1.31 -1.31				09 55 56 50 36 27 25 18	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1			
0.44 6/2	0 1.5 7.0 15.0 15.0 30.0 50.0 70.0 70.0 70.0 70.0 70.0 70.0	५५५ ५५५ ५५५ ५५५ ५५५ ५५५ ५५ ५५ ५५ ५५ ५५	ኯጙተ <b>ኯኯ፞ኯ</b> ኯ፞ኯ፞፞ኯ፞፞፞፞፞ኯ፞ኯ፟ኯኯኯኯኯ ኯጙተኯኯኯኯኯ፟፟፟፟፟ኯ፟፟፟፟፟ኯ፟ኯኯኯኯኯኯኯኯኯኯኯ				-57 -57 -57 -57 -56 -76 -76 -74 -33 -24 -24 -24	-1.68 -51 -953 -68 -55 -57 -26 -1.4 -09			

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TABLE IV.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000;  $T_c$  = 0.2 - Concluded (b)  $\alpha_u$  = 140, 160 - Concluded

	Per-			Upper	surface	 			Lower	surface	 
Spanwise	cent				of attack					of attack	
stations	apord	140	160				140	16°			
0.56 b/2	0 1.5 4.0 7.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	\$\$\$\$7\$	1.01.74 7.74 7.76 7.76 7.76 7.76 7.76 7.76 7				1.21 .85 .50 .38 .31 .24 .23 .20 .02 .22 .19	1.26 .97 .48 .41 .32 .32 .35			
0.68 3/2	0 1.5 4.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 95.0	ଗ୍ଷ୍ଟଙ୍କ୍ଷ୍ୟ୍ଟ୍ୟରେଥ୍ୟମ୍ଟ୍ର ↑†ଦ୍ଦ୍ଦ୍ନ୍ନ୍ନ୍ନ୍ନ୍ନ୍ନ୍ନ୍ନ୍ନ୍ନ୍ନ୍ନ୍ନ୍ନ୍ନ୍ନ	45-78-45-58-88-45-88-11-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6				-12 .54 -57 .51 .45 .31 -25 .22 .20 .14	-67 -42 -59 -55 -54 -37 -30 -30 -31 -30 -31 -31 -31 -31 -31 -31 -31 -31 -31 -31			
0. <del>0</del> 0 b/2	0 1.5 1.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	85855588855555788 444444111111	53346000643364386436436443664364364364364364364364364364				.02 .54 .55 .50 .41 .25 .21 .20 .15 .06	194   8342   885498			
0.94 6/2	0 1.5 4.0 7.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 90.0 95.0	-3.39 -2.37 -2.37 -1.25 -1.23 -1.23 -1.27 -1.31 -1.37 -1.31 -1.39 -1.04	5.08 -3.88 -2.88 -2.80 -1.80 -1.80 -1.80 -1.11 -1.15 -1.15				.21 .47 .40 .32 .24 .19 .14 .10	13 -57 .57 .53 .47 .36 .29 .23 .19 04			

CONT LUENTLAL



TABLE V.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000;  $T_c$  = 0.4 (a)  $\alpha_u$  = 2°, 4°, 6°, 8°, 10°, 12°

1	Day 1			Upper s	urface			τ			Lover			
Spanwise	Per-			Angle of						.0 -	Angle of		3.0 1	120
stations	chord	20	¥0	60	80	10°	120	4	20	¥°	<u>~</u>	8°	10°	12
0.10 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 50.0 60.0 70.0 95.0	0.56 0 - 18 - 26 - 29 - 31 - 34 - 34 - 34 - 34 - 25 - 24 - 20 - 15 - 03	0.56 34 49 47 47 47 42 38 28 28 05	0.40 72 73 68 64 53 40 33 27 05	0.03 -1.21 -1.03 97 85 77 72 62 53 44 36 30 23 07	-0.50 -1.84 -1.44 -1.95 86 60 89 60 89	-1.16 -2.39 -1.77 -1.50 -1.29 -1.12 99 81 54 54 35 35 10		0.09 07 09 09 09 07 05 04 01	0.36 .17 .07 .04 .04 .01 .01 .01 .02 .05	0.5\\ .36 -36 -22 .18 .15 .10 .10 .09 .07 .09	0.64 .51 .36 .30 .25 .20 .17 .14 .13 .66	0.661 - 1.50 ************************************	0.61 .70 .57 .49 .42 .35 .30 .20 .20
0.19 b/2	0 1.5 1.0 15.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	1.798 1.988 1.889 1.168		- 02 - 4.88 - 1.88 - 1.31 - 1.	98 	23.48.88.55   82.55.33.42.86.01	7.68 7.53 7.68 -2.86 -1.02 -1.02 -1.03 -1.		1.14 .73 .24 06 24 26 13 01 .01	1.36 1.01 .49 .17 02 15 07 .04 .13	1,46 1,23 .74 .38 .15 02 .03 03 .15 .05	1.44 1.39 -95 .59 .31 .11 .10 -12 .18	1.36 1.52 1.15 .46 .19 .18 .18 .24	1.22 1.62 1.34 .94 .60 .30 .25 .21 .29
0.31 b/2	0 1.5 4.0 10.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 95.0	99 35 41 35 41 35 36 32 36 32 35 30 30	1.00 .12 36 55 60 57 49 41 35 30 22	1	1.13 73 -1.04 -1.04 -1.09 92 57 57 41 29 39	1.03 -1.28 -1.49 -1.39 -1.30 -1.21 -1.88 88 53 34 35	85 -1.84 -1.87 -1.60 -1.47 -1.03 -1.93 -1.99 -1.99 -1.99 -1.99		90 78 71 52 29 22 11	36 57 54 36 29 20 15 07		.53 .13 07 12 06 03 0 .02 	.84 .40 .01 .07 .07 .09 .10	1.13 .65 .29 .16 .18 .16 .15 .15 .16
0 <b>.375</b> b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 90.0	.48 .08 12 27 34 35 35 25 20 15 06	-54 -50 -51 -52 -51 -52 -51 -31 -35 -25 -04	.27 98 52 83 	32 -1.67 -1.23 -1.15 -1.07 96 87 63 52 43 24 24 06	-1.19 -2.53 -1.75 -1.57 -1.38 -1.21 -1.06 74 60 50 39 26 10	-2.34 -3.34 -2.23 -1.91 -1.45 -1.27 85 67 55 42 30		15 26 24 29 18 12 05 .01	.28 .10 .01 .02 03 05 03 01 .01	.53 .36 .36 .15	.60 .54 .40 .29 .28 .20 .17 .14 .15	.52 .62 .51 .39 .36 .25 .25 .25 .19 .19	.32 .61 .59 .51 .48 .39 .3* .26 .25
0.44 6/2	0 1.5 1.0 10.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 90.0	1.28 98 84 90 58 40 32 32 32	0.75 -1.80 -1.33 -1.28 -1.09 78 61 47 39 31 20 05	15 -2.76 -1.90 -1.73 -1.44 -1.20	-1.40 -3.82 -2.53 -2.20 -1.45 -1.20 89 66 52 40 30	7.54 7.74 7.74 7.74 7.15 7.16 7.16 7.16 7.16 7.16 7.16 7.16 7.16	-5.00 -6.51 -4.11 -3.32 -2.67 -2.04 -1.17 86 51 51 01 01		1.09 .63 07 29 16 06 .03 .12	1.37 .97 .53 .21 01 13 06 .15 09	1.45 1.25 .80 .46 .21 .01 .05	1.38 1.43 1.03 .70 .42 .18 .27 .15 .18	1.17 1.56 1.25 .88 .80 .20 .21 .25	93 1.66 1.45 1.07 .78 .41 .32 .27 .30

PORTULAT.

TABLE V.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000;  $T_C = 0.4$  - Continued (a)  $\alpha_U = 2^\circ$ ,  $4^\circ$ ,  $6^\circ$ ,  $8^\circ$ ,  $10^\circ$ ,  $12^\circ$  - Concluded

Once	Per-			Upper	surface		<del></del>	1			Torre	r surface		
Spanwise stations	Cente			Angle	of attach	2		1				of attac	-	
	chord	20	140	6°	80	100	120	1	20	10	60	80	100	1 240
0.56 ъ/2	0 1.5 4.0 7.0 10.0 20.0 30.0 50.0 60.0 80.0 90.0 95.0	0.47 04 34 39 36 35 30 25 19 01	0.90 .161 31 56 56 50 45 38 38 38 26 21 04	1.14 24 64 76 81 76	1.20 71 99 -1.04 -1.07 89 73 67 54 36 27 05	1.10 -1.30 -1.47 -1.46 -1.25 -1.05 89 79 64 51 43 32 06	0.88 -1.90 -1.89 -1.89 -1.47 -1.25 -1.04 91 57 57 46 34 07		-1.18 -1.16 78 66 50 34 25 01 01	-0.56 76 57 48 38 25 19 01	0.01 35 ,42 ,10	0,48 01 20 19 19 14 07 03 12 1.13	0.83 .26 02 03 05 05 .01 .03 05 .16 .15 .21	12°  1.13 -53 -10 .08 .04 .09 .10 .03 .21 .20 .25
0.68 ъ/2	0 1.5 7.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	.33 .19 19 27 27 26 27 15 01	-59 23 43 47 50 48 41 33 24 19 12 0	.40 80 87 81 31 	16 -1.52 -1.34 -1.19 -1.02 91 66 53 43 24 13 .03	-1.15 -2.45 -1.87 -1.56 -1.19 -1.03 64 51 38 26	-2.54 -3.50 -2.45 -1.70 -1.44 -1.22 55 55 27 11		36 40 33 28 20 16 10	-15 09 10 09 06 03 04 07 04	.45 .25 .25 .11 .05	.57 .45 .27 .20 .18 .14 .14 .14 .14 .13	.50 .55 .40 .31 .29 .21 .19 .15 .15	.56 .58 .51 .43 .39 .31 .27 .20 .19
0.მი ъ/₂	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 90.0	.50 .14 66 21 25 24 24 14 10	.56 28 39 45 45 45 37 31 26 22 18 19	- 25 - 86 - 77 - 77 - 7	44 -1.57 -1.26 -1.23 98 84 71 57 50 40 30 22 13 .01	-1.60 -2.47 -1.75 -1.49 -1.31 -1.09 92 71 59 36 25 13	-3.04 -3.50 -2.29 -1.87 -1.62 -1.32 -1.31 83 65 50 23 10 01		31 35 30 83 18 14 04 0 .04 .07	-17 0 07 06 04 01 .05 .06 .09 .10	.47 .26 .08 .06 .05 .07 .08 .10	.79 .45 .27 .23 .17 .13 .13 .12 .12 .12	.52 .54 .39 .31 .26 .21 .15 .15	.33 .58 .49 .42 .35 .29 .20 .16 .15
0.94 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	.33 .21 .01 10 16 19 21 23 20 20 11 08	.56 13 88 35 36 35 32 27 25 25 20 25 09	- 45 - 61 - 63 - 56 - 56 - 56 - 56 - 56 - 56 - 56 - 58 - 58 - 58 - 58 - 58 - 58 - 58 - 58	01 -1.19 -1.04 95 80 67 55 43 39 33 28 19 10	87 -e.08 -1.45 -1.24 -1.068671554537302011	-2.02 -2.29 -1.50 -1.58 -1.31 -1.06 65 51 40 31 19 09		52 39 30 24 19 14 08 03 04 .07	08 12 10 09 09 09 09 09 09 09	.34 .12 .06 .01 .01 .01 .04 .08 .09	.52 		.41 -49 .41 .35 .26 .19 .15 .14 

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TABLE V.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000;  $T_c$  = 0.4 - Continued (b)  $\alpha_u$  = 14°, 16°

	Per-			Upper	surface				Lower	surface	 
Spanwise stations	cent				f attack					f attack	
0.10 b/2	0 1.5 4.0 7.0 15.0 20.0 30.0 50.0 50.0 90.0	4 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	8 8 8 4 4 5 4 5 8 8 8 8 8 8 8 8 8 8 8 8				14° 0.52 -7456 .59 .49 .31 .36 .27	1905   100 \$34 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5			
0.19 7/2	0 1.5 4.0 7.0 15.0 20.0 30.0 40.0 70.0 80.0 95.0	रूपन प्रभूत । नुक्का अवस्थ अ	9-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1				1.09 1.69 1.48 1.08 2.74 .41 .32 .26 .30	1.54 1.53 1.10 .83 .49 .39 .30 .36			
0.31 b/2	0 1.5 4.0 70.0 15.0 20.0 340.0 60.0 60.0 80.0 80.0	9.33 9.33 9.4.516 9.4.516 1.53 1.53 1.53 1.53 1.53 1.53 1.53 1.53	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\				1.368 .55898844 .458988444	1.51 1.06 .57 .40 .34 .31 .30 .28			
0.375	0 1.5 7.0 15.0 20.0 30.0 50.0 70.0 80.0 90.0	74 94 94 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5.34 5.34 5.34 5.38 6.38 6.39 6.53 6.53 6.53 6.53 6.53 6.53 6.53 6.53				02 56 57 58 49 43 34 30	-51 -51 -768 -759 -385 -288			
0.44 b/2	014.000.0000.00000000000000000000000000	######################################	፟ ፟ ፟ ፟ ፟ ፟ ፟ ፟ ፟ ፟ ፟ ፟ ፟ ፟ ፟					-1.49 -71 -79 -92 -93 -56 -47 -39 -35 -35 -37 -11			

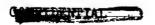


TABLE V.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000;  $T_c$  = 0.4 - Concluded (b)  $\alpha_u$  = 14°, 16° - Concluded

	Per-			Upper	surface				Lover	surface	*******	
Spanwise stations	cent		,	Angle o	of attach				Angle	of attack		
0.56 b/2	0 1.5 1.0 7.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 90.0 95.0	14° 0.55 -e.58 -e.36 -e.19 -1.98 -1.17 -1.17 -1.018163513606 .13	16° 0.11.387 94.59 94.59 177.11.56 1.56 1.56 1.56 1.56 1.56 1.56 1.5				14° 1.37 1.37 1.37 1.35 1.22 1.20 1.14 1.17 1.10 1.26 1.24 1.29	1.53 .93 .33 .38 .21 .25 .23 .30 .30				
0.68 b/2	0 1.50 70.0 150.0 20.0 30.0 50.0 70.0 80.0 95.0	44.00000000000000000000000000000000000	-6.40 -5.50 -3.79 -2.92 -2.45 -1.63 -1.21 89 65 47 32 91 11				14 .54 .58 .52 .46 .38 .34 .27 .24 .21	-74 .40 .56 .51 .44 .38 .29 .26 .24 .16				
0.80 ъ/2	0 1.5 4.0 7.0 10.0 20.0 30.0 50.0 60.0 70.0 80.0 90.0	######################################	-6.98 -5.35 -2.29 -1.95 -1.95 -1.95 -1.95 -1.95 -1.95 -1.95 -1.95 -1.95 -1.95 -1.95 -1.95 -1.95 -1.95 -1.95 -1.95 -1.95 -1.95				02 .54 .56 .50 .42 .34 .25 .21 .20 .14	-50 .43 .57 .55 .48 .39 .24 .21 .16				
0.94 b/2	0 1.5 4.0 7.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	-3.51 -3.01 -2.41 -1.57 -1.25 -1.02 7* 57 41 31 10 05 04	-5.28 -3.86 -2.29 -1.82 -1.42 -1.15614335201716				.19 .53 .48 .41 .34 .25 .19 .15 .27	-17 -55 .52 .45 .39 .29 .21 .18				

TABLE VI.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000;  $T_c$  = 0.6 (a)  $\alpha_u$  = 2°, 4°, 6°, 8°, 10°, 12°

	Per-			Upper	surface						surface		
Spanwise stations	cent		1 20	Argle o	f attack			20	ţo.	Angle o	f attack	128	150
0.10 5/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0	o iiiiiiiiiii	0.5% 0.11.11.44.44.8% 0.11.11.11.11.11.11.11.11.11.11.11.11.11	8 255584 HH8888	80 02 20 30 4 82 76 86 51 4 86 88 81 86 81 1 1 1 1 1 1 1 1 1 1 1 1	10° -0.51 -1.80 -1.42 -1.059472605051322406	12° -1.24 -2.44 -1.87 -1.25 -1.95 -1.35 -1.34 -1.34	20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	0.55 .36 .24 .20 .13 .13 .10 .10	0.64	10° .63	00   00   10   10   10   10   10   10
0.19 b/2	95.0 0 1.5 1.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	.06 1.30 1.38 1.98 1.98 1.76 1.76 1.33 1.33 1.17 1.02	.04 -73 -2.12 -1.60 -1.33 -1.17 -98 - 58 - 33 - 26 - 1.4 05	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-01 -1.12 -3.99 -2.70 -2.81 -1.45 -63 -28 -28 -1.95 -04	-0.41 -5.12 -5.79 -1.12	05 -3.92 -6.28 -4.04 -2.52 -1.08 -7.79 -3.94 -1.08 -7.79 -3.33 -1.19 -0.01	.09 1.59 1.11 .44 .06 -117 -25 06 .19	.08 1.78 1.38 1.38 27 .03 13 03 23 03 13 06	.66 1.91 1.63 1.63 2.05 2.05 2.05 1.12 2.05	.09 1.90 1.81 1.23 .73 .40 .14 .17 .20 .29	.08 1.82 1.97 1.44 .93 .25 .25 .25 .25 .25	.10 1.66 2.07 1.64 1.13 .37 .37 .37 .33 .42
0.31 b/2	0 1.5 1.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 90.0	76 57 1.26 230 38 1.36 3.39 1.36 3.20 3.38 1.36 3.20 3.38 1.36 3.30 1.30 3.30 3.30 3.30 3.30 4.30 4.30 4.30 4	1.14 .32 30 52 58 56 47 40 29 21	1.36 1.66 1.68 1.68 1.68 1.68 1.68 1.68 1.6	1.44 - 48 - 97 -1.05 -1.05 -1.01 - 95 - 70 - 70 - 39 - 28 - 28 - 29 - 29	1.43 -1.33 -1.35 -1.35 -1.22 -1.86 69 45 45 18	1.3k -1.5k -1.5k -1.57 -1.57 -1.46 -1.57 -1.59 -	-1.29 -1.33 -1.02 -92 -64 -29 -21 -09 -18	791 - 791 - 76 - 73 - 33 - 22 - 11 - 05 - 10	159 9934199 1920	-34 -10 -28 -30 -16 -08 -08 -02 .03	.73 .22 06 13 0 .05 .09 .11 16	1.10 .53 .02 .15 .02 .14 .16 .17 .19 .22
0.37 <del>5</del> b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	*316 104 B 2 B B B B B B B B B B B B B B B B B	-58 -36 -47 -47 -49 -47 -48 -29 -29 -29 -306	- 37 - 84 - 72 - 73 - 73 - 73 - 74 - 75 - 75 - 75 - 75 - 75 - 75 - 75 - 75	-15 -1.52 -1.15 -1.10 -1.94 86 54 55 35 07	-91 -2.29 -1.63 -1.48 -1.19 -1.06 -76 -61 -51 -39 -28 -07	-1.98 -3.14 -2.13 -1.86 -1.67 -1.95 -1.95 -7.77 -1.99 -7.77 -1.99	-22 -30 -25 -21 -19 -13 -10 0	.24 .08 .08 .01 .01 .03 .01 .02 .05	.52 .37 .16 .14 .10 .10 .10 .11	.64 .56 43 .32 .30 .21 .80	.60 .66 .54 .44 .43 .31 .30 .24 .24 .22	.46 .68 .67 .58 .55 .45 .39 31 .31
0.44 5/2	0 1.5 1.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	1.48 -1.35 -1.04 -1.07 -876 -63 -51 -37 -30 -10 -03	.81 -2.27 -1.60 -1.53 -1.03 -83 49 49 39 29 14	134 1386 3888 55 55 5888 6 5 5 5 5 5 5 5 5 5 5 5 5	1.59 -1.54 -2.95 -2.55 -1.62 -1.31 54 54 54 59 54	-3.36 -5.93 -3.77 -2.50 -1.55 -1.55 -1.56 -3.81	5.44 5.74 5.74 5.75 5.75 5.75 5.75 5.75	1.54 .98 .95 .21 .27 .103 .05 .16	1.80 1.35 74 .33 .05 10 05 .11 .21 12	1.90 1.65 62 .30 .03 .09 .14 .18 .26	1.82 1.86 1.34 .87 .23 .17 .20 .24 .30	1.62 2.01 1.58 1.08 .74 .36 .27 .27 .29 .34	1.34 2.11 1.78 1.29 .38 .36 .35 .39



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TABLE VI.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000;  $T_c$  = 0.6 - Continued (a)  $\alpha_u$  = 2°, 4°, 6°, 8°, 10°, 12° - Concluded

	Per-		<del></del>	Upper	surface			Г	r	**	Lower	surface		
Spanwise stations	cent			Angle	of attack			ſ			Angle	of attack		
* CE UI CEIS	chord	20	¥°	6°	8°	10°	120	1	2 <sup>C</sup>	k <sup>o</sup>	60	80	100	120
0.56 b/2	0 1.5 4.0 7.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 90.0 95.0	0.43 .64 .03 .233 .403 .539 .539 .539 .539 .539 .539 .539 .53	0.97 -2468 -5932 -5932 -4134 -224 -2314	1.32 -574 -574 -574 -590 -341 -37 -314	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	1.52 -1.02 -1.36 -1.42 -1.43 -1.95 85 86 95 86 95 95 95 95 95 95 95 95	14444444444444444444444444444444444444		-1.66 -1.56 -1.56 -1.20 -1.02 85 40 30 01 04 16	-1.00 -1.14 82 82 66 51 30 22 03 .04 .07	-0.35 -70 -68 -59 -19 -39 -22 -16 -03 .09 .111	0.23 31 40 35 27 16 09 13 24	0.68 .01 -24 -23 -20 -16 -05 -01 -03 .18 .28	1.08 .33 01 06 06 05 .04 .24 .23
0.68 b/2	0 1.5 4.0 70.0 15.0 20.0 20.0 50.0 50.0 90.0	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	56944465543882171900 	#P&FP56884884458	ជាមានក្រុង មានការការការការការការការការការការការការការក	388845888884138	-2.53 -3.47 -2.43 -1.67 -1.41 -1.94 71 55 25 25 30 04		1.44 1.329 1.238 1.12 1.01 0.00 0.09 1.10 0.00 0.09	.10 06 12 12 09 05 03 04 .06 .09 .11	.44 .24 .10 .05 .05 .05 .06 .11 .13 .13	.58 .45 .28 .20 .17 .13 .13 .14 .13	.51 .55 .40 .32 .29 .24 .19 .17 .16	.27 .60 .51 .44 .39 .31 .29 .24 .22 .20 .15
о.80 ъ/2	0 1.5 4.0 15.0 15.0 20.0 20.0 20.0 70.0 70.0 70.0 70.0 70	**************************************	-57 -27 -38 -445 -45 -45 -36 -29 -217 -111 0	88888888888888888888888888888888888888	1-1-1-26 1-1-1-26 1-1-1-58 1-1-58 1-1-58 1-1-1-58 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	+ 45 + 1.73 + 1.47 + 1.308 + 1.91 + 1.91 + 1.95 + 1.47 + 1.13 + 1.01 + 1.03	-3.10 -3.51 -2.29 -1.87 -1.61 -1.31 -1.09 82 55 35 21 09		- 35 - 36 - 23 - 18 - 18 - 19 - 03 - 05 - 05 - 19	15 -08 -08 -05 -05 -05 -05 -05 -05 -05 -05 -05 -05	.46 .26 .26 .09 .06 .07 .06 .09 .10	.59 .45 -28 .22 .19 .15 -13 .14 .14 .13	.53 .54 .43 .27 .27 .27 .27 .27 .27 .27 .27 .27 .27	.32 .58 .51 .45 .36 .29 .21 .20 .18
0.9% ъ/2	0 1.5 0 70.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0 1	32 32 32 32 32 32 32 32 32 32 32 32 32 3	.56 -133 -333 -333 -333 -333 -333 -326 -220 -133 -07	4886358834858644956	-1.19 -1.03 765 765 531 37 37 37 38 37 38	898 808 19.45 19.4	-2.06 -2.29 -1.90 -1.57 -1.30 -1.66 52 31 39 30 30 30 30 30 30 30 30		-26 -26 -27 -26 -18 -12 -06 -01 -05 .05	06 10 07 05 01 02 06 .06	.34 .12 .06 .03 .01 .04 .06 .08	.52 .31 .24 .15 .12 .09 .09 .09 .09		.41 .557 .47 .357 .28 .20 .15 .14 .10 .09



TABLE VI.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000;  $T_c$  = 0.6 - Continued (b)  $\alpha_u$  = 14°, 16°

	Per-			Upper	surface					surface	 
Spanvise stations	cent			Angle	of attack		-10		Angle	of attack	 
0.10 ъ/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 50.0 60.0 70.0	4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 -	16° -3.869-4-1.766-4-1.800-1.751-1.7				0.47 0.47 .74 .67 .59 .57 .46 .42 .38 .34	16° 0.271 23 .59 .59 .55 .41 .33 .33 .33 .33 .33 .33 .33 .33 .33 .3			
0.19 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	5.54 -7.56 -7.57 -7.57 -7.57 -7.57 -7.57 -7.58 -7.57 -7.58 -7.57 -7.58 -	7-8-57 -3-8-57 -3-8-57 -3-8-57 -1-8-57 -1-5-38-21 -1-6				1.46 2.14 1.79 1.26 .87 .49 .47	9.89 1.87 1.38 9.58 9.58 1.46 1.91 1.91 1.91 1.91 1.91 1.91 1.91 1.9			
0.31 5/2	0 1.5 7.0 15.0 15.0 20.0 20.0 50.0 70.0 90.0 90.0	1.16 -2.17 -2.26 -2.09 -1.87 -1.53 -1.53 -1.04 05 53 05 23	89 4444 4444 4444 4444 4444 4444 4444 4				1.40 .19 .11 .16 .25 .26 .28	1.64 1.01 .46 .28 .34 .30 .31 .32			
0.375 b/2	0 1.5 4.0 7.0 15.0 30.0 30.0 50.0 780.0 780.0 780.0 780.0 780.0	37172852251 588683399 7144471 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-5.15 -5.13 -2.28 -2.36 -1.98 -1.72 -1.15 -91 -7.4 -1.13 -2.13				क्ष्या । क्ष्या । क्ष्य । क्ष्या । क्ष्य । क्ष्य । क्ष्य । क्षा । क्ष्य । क । क । क । क । क । क । क । क । क । क	- 29 - 53 - 80 - 77 - 63 - 55 - 45 - 33 - 33 - 33			
0.44 7/2	0 1.5 7.0 7.0 15.0 20.0 50.0 60.0 78.0 78.0 90.0	1951945598675384554 19519415598675384554					.80 2.13 1.85 1.40 1.08 .61 .50 .81 .39 .41	1.81 1.821.884.44 286			

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TABLE VI.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000;  $T_c$  = 0.6 - Concluded (b)  $\alpha_u$  = 14°, 16° - Concluded

	Per-			Upper	surface	 T			Lower	surface	 
Spanvise	cent				f attack				Angle o	f attack	
stations	chard	140	16°				140	16°			
0.56 ъ/2	0 1.5 4.0 7.0 15.0 20.0 30.0 50.0 70.0 80.0 90.0	144444444 200000000000000000000000000000	88.88.63.88.44.28.58.48.48.48.48.48.48.48.48.48.48.48.48.48				1.12 .60 .16 .09 .04 .11 .12  .20 .25	1.63 81 917 149 149 149 149 149 149 149 149 149 149			
o.68 ъ/2	0 1.5 10.0 15.0 15.0 20.0 20.0 50.0 70.0 80.0 95.0	अ००२४००४००४५०० नन्ष्येनन्त्रांतिति	455755358888888888318				-14 -54 -59 -53 -46 -38 -33 -26 -22 -22 -16 -11	P4   &555,58   388999			
0.80 ъ/2	0 1.5 4.0 7.0 10.0 20.0 30.0 40.0 50.0 60.0 95.0	4498886788885884444	-7.14 -5.51 -2.54 -2.74 -2.80 -1.86 -1.64 -1.75 -1.30				04 .54 51 .51 .44 .35 25 .24 .16 .10	-57 .58 .56 .50 .50 .29 .21 .16 .10			
0.94 ъ/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	-3.58 -3.05 -4.92 -1.92 -1.95 -1.54 -1.54 -1.54 -1.54 -1.54 -1.54	-5.36 -3.88 -2.92 -2.26 -1.40 -1.14 79 60 34 24 28 16				.17 -60 .54 .41 .20 .20 .18 -11 .09 .05	-19 -58 -57 -47 -40 -30 -24 -20 -12 -04			ACA

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TABLE VII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000;  $T_c$  = 0.8 (a)  $\alpha_u$  = 2°, 4°, 6°, 8°, 10°, 12°

	Per-				surface.						Lower	surface		
Spanvise stations	cent				of attack			]			Angle	of attack		
0.10 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	20 0.57	- 29 - 37 - 43 - 43 - 43 - 43 - 40 - 35 - 29 - 27 - 21 - 02 - 04	60 0.40 69 70 66 66 55 55 51 35 35 35 25 17 04	8° 0.02 -1.20 -1.0292847570615236292106	10° -0.58 -1.83 -1.81 -1.22 -1.0695857361494133231003	12° -1.30 -2.47 -1.80 -1.51 -1.90 -1.12 -1.00 -83854536251007		20 0.10 04 04	99 .07 .07 .09 .07 .07 .07	.22 .22 .18 .15 .15 .15	80 0.65 -57 -37 -33 -26 -24 -20 -18 -19	10° 0.65 .65 .25 .40 .34 .30 .26 .24 .24	0.58 -71 -61 -53 -49 -41 -36 -33 -29 -27
o.19 b/2	0 1.5 4.0 7.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 95.0	1.38 -1.80 -1.37 -1.13 98 62 	.70 -2.62 -1.86 -1.72 -1.27 -1.27 -1.07 49 37 30 23 15 01	17 -3.59 -2.43 -1.94 -1.62 -1.30 74 40 33 25 15 05	-1.26 -4.63 -3.05 -2.38 -1.97 -1.56 64 46 29 20 05	-2.65 -5.87 -3.93 -2.91 -2.39 -1.86 1.01 75 55 33 32 07	-1.16 -7.14 -1.54 -3.39 -2.77 -2.11 -1.15 -62 -46 -37 -25 -03		2.05 1.50 .67 .19 11 24	2.24 1.79 .97 .44 .12 08 0	2.34 2.05 1.24 .64 .31 .04 .12 .18 .30	2.33 2.24 2.24 2.91 .49 .18 .20 .21 .34	2.24 2.39 1.73 1.10 .57 .30 .29 .40	2.14 2.53 1.94 1.30 .85 .44 .39
0.31 8/2	0 1.5 2.0 10.0 15.0 20.0 20.0 40.0 50.0 60.0 70.0 80.0 95.0	.81 .74 01 28	1.26 .92 .25 .51 .63 .61 .46 .51 .35 .31 .24	1.75 .20 .56 76 81 79 60 61 59 41 35 25	1.68 23 -1.90 -1.05 -1.09 -1.06 -1.00 75 61 50 41 31	1.72 78 -1.34 -1.36 -1.36 -1.31 -1.21 95 59 59 59 59	1.71 -1.30 -1.74 -1.72 -1.66 -1.56 -1.44 -1.11 -1.01 84 55 -1.40 55 04		-1.77 -1.75 -1.28 -1.16	-1.10 -1.26 -1.03 64 45 27 20	-46 -81 -75 -79 -15 -08 -08	.32 -35 -48 -48 -30 -16 -06 0	.61 .05 -24 -29 -15 06 .01 .05	1.02 .27 02 13 02 .04 .07 .10
0.375 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 50.0 50.0 60.0 70.0 80.0 90.0	.38 .24 .04 09 17 25 27 31 28 25 25 20 15	- 15 - 27 - 37 - 45 - 45 - 36 - 36 - 39 - 25 - 19 - 01	. \$6 - 68 - 68 - 65 - 65 - 65 - 65 - 65 - 65 - 65 - 65	.05 -I.34 -1.04 -1.03 97 91 85 55 53 45 26 05	67 -2.19 -1.55 -1.44 -1.31 -1.38 -1.07 63 92 40 29 06	-1.60 -2.93 -2.05 -1.84 -1.87 -1.31 74 60 46 32 08		30 35 24 25 17 12 05 .02	.20 .05 .01 .02 .01 .03 .07	.51 .34 .25 .19 .18 .12 .11 .10 .12	.67 .56 .35 .35 .26 .24 .18 .20	.69 .69 .79 .29 .25 .21	.60 .76 .73 .64 .60 .49 .44 .38 .35
0.44 b/2	0. 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	1.61 -1.77 -1.25 96 83 65 52 46 38 27 17 07	.82 -2.76 -1.86 -1.73 -1.36 -1.11 85 49 49 49 34 11	-29 -3.95 -2.54 -2.28 -1.44 -1.13 -36 -36 -36 -36 -01 -01	-1.78 -7.23 -3.33 -2.23 -1.76 -1.78 -1.78 -1.79 -2.89 -2.89 -1.71 -1.70	-3.65 -6.72 -4.22 -3.74 -2.12 -1.64 -1.16 -82 -33 -20 0	-5.84 -6.47 -5.20 -4.19 -3.247 -1.91 -1.33 -93 -5.247 -1.33 -5.247 -1.33 -5.247 -1.33 -5.247 -5.247 -5.247 -5.247 -5.247 -5.20 -6.247 -		2.00 1.39 .19 .19 -15 -25 -13 0 .09 .21	2.24 1.75 1.01 .50 .15 06 0 .10 .15 .28	2.34 2.06 1.34 .80 .41 .10 .12 .18 .22 .32	2.24 2.28 2.28 1.63 1.07 .67 .28 .25 .30 .37	2.02 2.45 1.88 1.29 .86 .12 .33 .35 .35 .42	1.75 2.77 2.11 1.50 1.08 .58 .47 .42 .41 .46 .16

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TABLE VII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000;  $T_c$  = 0.8 - Continued (a)  $\alpha_u$  = 2°, 4°, 6°, 8°, 10°, 12° - Concluded

	Per-			Upper	surface					Lover	surface		
Spanwise	cent			Angle o	of attack	•				Angle o	f attack		
stations	chard	20	ħο	60	80	10°	150	20	ħ <sub>0</sub>	60	80	10 <sub>0</sub>	12°
0.56 b/2	0. 1.5 4.0 70.0 15.0 20.0 30.0 40.0 50.0 60.0 80.0 90.0	\$ 1.588.548.864.85	1.00 99.54 96.55 96.43 96.37 96.37 96.37	1.45 24 - 63 - 787 - 887 - 769 - 759 - 759	1.71 22 87 -1.06 -1.14 -1.20 95 85 79 62 51 43 35 06	1.83 78 -1.32 -1.44 -1.44 -1.45 -1.33 -1.15 99 72 79 49 39 06	1.85 -1.33 -1.76 -1.80 -1.76 -1.38 -1.16 -1.05 -83 -67 -1.33 -1.16	-2.20 -1.95 -1.47 -1.25 -96 -75 -33 -01 .06	-1.47 -1.54 -1.05 -36 -36 -36 -36 -36 -36 -36	-0.74 -1.06 -98 -98 -98 -98 -98 -98 -98 -98 -98 -98	-0.05 63 70 60 53 37 22 14 04 12 15	0.05 -24 -45 -40 -36 -26 -27 -07 -03 -30 -30	0.96 .10 24 25 22 17 07 01 03 .24 .23 .34
о.68 ъ/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	24 46 46 -19 -19 -26 -27 -20 -17 -20 -17 -20 -17 -20 -20 -17 -20 -20 -20 -20 -20 -20 -20 -20 -20 -20	5673354444386666666666666666666666666666666	4688 * 865 8 4 5 6 8 1 5 8 1 5 8 8 1 5 8 1	-08 -1.43 -1.28 -1.13 -97 86 76 65 52 41 31 23 11	-1.04 -2.33 -1.78 -1.19 -1.31 -1.15 79 61 49 35 24 11	2334888848588 474444	- 34 - 36 - 31 - 24 - 19 - 12 - 01 - 03 - 06 - 10 - 11	.08 .08 .13 .12 .09 .06 .02 .07 .11 .13	.44 .23 .09 .05 .04 .04 .06 .10 .10 .12	. 58 . 45 . 27 . 20 . 17 . 13 . 14 . 14 . 15 . 14 . 10	.56 .56 .33 .29 .24 .20 .18 .17	.29 .60 .52 .44 .39 .29 .26 .24 .20 .20
o.8o ъ/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	.48 .19 .02 .13 .18 .22 .23 .22 .21 .15 .10	58 - 24 - 35 - 37 - 49 - 40 - 35 - 20 - 20 - 10 - 08	.28 81 76 74 65 52 34 26 21 13 0	- 43 -1.55 -1.24 -1.03 96 84 70 56 40 30 23 12 0	-1.60 -2.44 -1.72 -1.47 -1.29 -1.07 -90 -70 -45 -34 -24 -11 0	-3.13 -3.52 -2.30 -1.63 -1.33 -1.35 65 36 36 04	37 38 31 24	.15 02 05 05 03 01 .05 .07 .09 .10	.46 .26 .12 .10 .07 .06 .10 .11 .11	.59 .45 .28 .22 .18 .15 .12 .14 .13 .12 .11	.52 .55 .40 .33 .27 .22 .17 .16 .15 .11	.32 .58 .51 .43 .36 .30 .22 .20 .18 .15
0.94 1/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 90.0 95.0	.31	.56 -11 -25 -32 -33 -33 -33 -24 -21 -19 -06 .09	.47 -58 -61 -60 -53 -49 -36 -37 -29 -25 -25 -09 -04	14 -1.18 -1.02 92 76 65 54 41 38 32 26 18 11	89 -2.05 -1.44 -1.24 -1.05 86 70 54 35 35 30 19 06	2.10 2.29 -1.59 -1	55	01 07 10 09 09 01 01 06 09 10	.34 	.52 30 .23 .15 .11 .09 .09 .09 .09	.53 .42 .34 .26 .21 .15 .12 .11 .09 .09	.40 .51 .44 .34 .29 .21 .15 .14 .09

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TABLE VII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000;  $T_c$  = 0.8 - Continued (b)  $\alpha_u$  = 140, 16

	Per-			Upper	surfece				Lower a	urface	
Spanwise Stations	cent		- 40	Angle o	f attack				Angle of	attack	 
0.10 ь/2	0 1.5 2.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	14° -2.22 -3.25 -2.26 -1.84 -1.54 -1.30 -1.1475757937261310	16° -3.31 -3.87 -2.70 -2.16 -1.49 -1.25 -1.00808039281511				14° 0.45 .74 .69 .60 .55 .42 .38 .34 .30	0.22 .83 .64 .73 .64 .99 .147 .43 .39 .36			
0.19 b/2	0 1.50 70.00 150.00 390.00 70.00 70.00 70.00 70.00 70.00 70.00 70.00 70.00	-5.40 -8.57 -5.40 -3.95 -3.21 -2.41 -1.27 -68 -55 -41 -25 -06	-7.88 -9.98 -6.21 -5.50 -3.62 -2.68 -1.40 -1.00 72 56 40 25 10				1.89 2.62 2.11 1.47 1.07 1.06 -53 -49 -49	1.38 2.55 2.19 1.54 1.14 .60 .50 .56			
0.31 b/2	0 1.5 4.0 7.0 10.0 20.0 30.0 40.0 50.0 70.0 80.0 95.0	1.64 -1.87 -2.19 -2.10 -1.96 -1.83 -1.66 -1.25 -1.15 74 61	1.45 2.63 2.429 2.63 2.429 2.10 1.86 1.29 1.81 -1.29 -1.81 -1.66 -1.47				1.38 .66 .15 .01 .09 .12 .14 .20 	1.67 .90 .31 .14 .20 .22 .26 .26 .29			
0.375 b/2	0. 1.5 \$.0 7.0 15.0 20.0 30.0 \$0.0 60.0 70.0 80.0 90.0	-2.85 -3.88 -2.62 -2.04 -1.77 -1.55 -67 -3.56 36 99	1.46 14.90 13.12 14.05 15.05 1			•	.23 .75 .82 .75 .71 .79 .54 .45 .45 .36	-03 .64 .95 .90 .78 .66 .60 .50 .41			
0.44 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 50.0 50.0 70.0 80.0 90.0	-8.29 -9.23 -5.26 -3.76 -2.11 -98 -7.76 -1.98 -7.75 -0.4 -0.6	-11.19 -11.89 -7.54 -1.98 -2.26 -1.05 -26 -26 -30				1.17 2.58 2.26 1.64 1.23 .68 .50 .47 .51	08 2.24 2.21 1.59 1.31 .55 .55 .55 .26			

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TABLE VII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000;  $T_c$  = 0.8 - Concluded (b)  $\alpha_u$  = 14°, 16° - Concluded

	Per-			Upper	surface	 1	T	<del></del>	Lover	surface	 
Spenvise	cent			Angle	of attack				Angle	of attack	 
stations	chord	14°	160				140	16°			
0.56 b/2	0 1.5 \$.0 7.0 10.0 15.0 20.0 30.0 \$0.0 60.0 70.0 80.0 90.0 95.0	1.76 -1.94 -2.22 -2.19 -2.08 -1.67 -1.59 -1.31 -1.179374624609	1.50 -2.65 -2.72 -2.53 -2.13 -1.80 -1.46 -1.29 -1.02 -66 -52 -1.20				1.36 .40 04 12 09 07 .05 .08	1.68 .66 .03 0 .01 .11 .14			
0.68 ъ/2	0 1.5 4.0 7.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 95.0	-\$ 28 -\$ 26 -3.06 -2.41 -2.0\$ -1.67 -1.41 -1.06 -81 -60 -1.44 -05 -01	-6.45 -5.75 -2.49 -1.61 -1.20 -1.61 -1.20 -1.63 -1.36 -1.36 -1.36				13 -57 -59 -53 -48 -39 -34 29 -21 -21 -18	75 .42 .58 .54 .45 .40 .33 .29 .25 .19			
0.80 b/2	0 1.5 1.0 10.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 90.0 95.0	-5.02 -4.30 -2.92 -2.31 -1.57 -1.28 -95 -71 -53 -22 -1.4 -09	-7.25 -5.45 -3.56 -2.75 -2.80 -1.45 -1.04 75 -1.45 -1.31 26 22 20				04 .54 .57 .57 .57 .24 .35 25 .24 .20 .16	60 42 59 56 50 30 30 24 17 06			
0.94 ъ/2	0 1.5 2.0 7.0 15.0 20.0 30.0 50.0 60.0 70.0 80.0 95.0	-3.63 -3.06 -2.43 -1.94 -1.25 -1.25 -1.00 -71 -30 -16 -10 -05	-5.44 -3.91 -2.93 -2.27 -1.80 -1.14 79 59 41 35 20 18				.17 56 .53 .43 .35 .20 .16 .07	.21 .55 .55 .40 .32 .25 .20			



TABLE VIII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.80; R = 1,000,000;  $T_c = 0$  (a)  $\alpha_u = 2^\circ$ ,  $4^\circ$ ,  $6^\circ$ ,  $8^\circ$ ,  $10^\circ$ 

	Per-	Opper surface							Lower surface					
Spanwise		Angle of attack					1	Angle of attack						
Stations	chord	20	10	6°	8º	100		1	20	řο	60	80	10°	
0.10 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	0.64 -07 -159 -38 -41 -43 -37 -32 -38	0.68 16 37 47 50 53 57 57 56 57 36 36	0.69 60 70 68 67 69 70 68 66 99 36	0.57 73 85 -1.00 95 90 88 90 89 79 79 30 30	0.49 -1.01 -1.06 -1.16 -1.12 -1.10 -1.05 96 95 66 50 19			0.15 09 20 21 24 25 25 20 21 24 25 20 20 21 20 21 20 21 20 20 21 20 20 20 20 20 20 20 20	0.35 .12 03 06 10 15 15 15 05	0.52 -30 -13 -04 -01 -04 -03 -03	0.64 .43 .24 .15 .06 .04 .01 0	0.75 .55 .36 .28 .24 .16 .19 .06 .09	
0.19 8/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 90.0 95.0	74 - 57 - 53 - 53 - 53 - 53 - 53 - 53 - 53 - 53	.67 41 65 78 84 -1.00 76 53 34 23 23	54 -759 -1.05 -1.0	.33 -1.34 -1.37 -1.36 -1.49 -1.27 83 51 34 13 27	-1.21 -1.50 -1.46 -1.45 -1.41 -1.20 -1.04 -80 80 26			- 25 - 37 - 37 - 37 - 78 - 71 - 24 - 55 - 60	. 25 . 25 . 28 	.59 .41 .19 .09 .31 .21 .08 .05	.67 .54 .32 .11 .12 .06		
0.31 1/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	.63 08 38 48 59 59 59 56 22 31 21	55.00 - 1	-54 -61 -91 -1.05 -1.14 -1.15 -1.09 -1.01 -30 -30 -30 -30	.50 84 -1.28 -1.31 -1.36 -1.39 -1.32 -1.32 -1.32 -1.35 54 55	-1.27 -1.39 -1.40 -1.41 -1.39 -1.25 -1.66 54 66			03 19 26 26 23 23 23 23 23 23	.27 .05 .20 .21 .12 .14 .14 .14	\$566   9949 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	.58 .39 .20 .20 .55 .30 .30 .55 .30 .30 .30 .30 .30 .30 .30 .30 .30 .30	.70 .51 .30 .41 .13 .66 .03 .05	
0.375 b/2	0 1.5 1.0 7.0 10.0 15.0 20.0 30.0 50.0 70.0 80.0 90.0 95.0	.60 05 27 46 61 67 57 33 31 21 05	.60 47 61 81 91 97 95 61 35 31 32 04	-50 90 92 -1.08 -1.19 -1.25 -1.25 -1.25 -1.34 34 05	-35 -1.14 -1.27 -1.35 -1.27 -1.27 -2.27 -35 -35 -35	21 -1.29 -1.30 -1.24 -1.25 -1.25 -1.68 86 46 46			.01 -22 -31 -32 -33 -33 -34 -16 -05	.31 .06 09 15 16 20 15 20 21	50.00 0	.60 .41 .21 .13 .08 .08 .03	्र इ.स. १५६४ १५६४	
0.44 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	-71 -17 -11 -61 -67 -87 -91 -79 -10 -14 -36 -28 -17 -02	.69 60 76 95 -1.04 -1.18 -1.21 -1.10 49 44 38 29 19	4897 -1.11 -1.20 -1.24 -1.19 -1.18 -1.01856449352415	.26 -1.20 -1.27 -1.21 -1.20 -1.06 -1.01 91 82 59 49 49 49	.08 -1.01 -1.04 - 98 - 95 - 91 - 87 - 81 - 75 - 68 - 68 - 49 - 41			-23 06 21 38 65 73 33 16 04 04	. 48 . 20 	.61 .20 .04 20 32 32 32 06 .01	66 -54 99 03 21 11 06 03 0	.67 .60 .28 .08 .08 -11 08 06 04 19	

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TABLE VIII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.80; R = 1,000,000;  $T_c$  = 0 -. Concluded (a)  $\alpha_u$  = 2°, 4°, 6°, 8°, 10° - Concluded

	Per-			Upper	surface					Lover	surface		
Spanvise stations	cent			Angle o	attack		1			Angle	of attack		
300010119	chard	50	40	6°	8°	10°		50	10	60	80	100	
0.56 b/2	0 1.5 1.0 10.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	\$938866855\$\$\$\$\$09668	0.514 -686 -865 -584 -582 -382 -382 -550	0.27.00 -1.0	0.45 -90 -1.10 -1.20 -1.31 -1.21 -1.21 -1.21 -1.21 -1.21 -1.21 -1.21 -1.20 -1.21 -1.20 -1.21 -1.20 -1.	0.496		-0.86 -38 -38 -38 -38 -38 -38 -38 -38 -38 -38	0.25 .01 11 15 14 12 11 09 02 0	0.60	0.55 .33 .12 .09 .06 .03 .01 -01 -01	0.62 .41 .21 .13 .11 .06 .04 .01	
0.68 ъ/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	. \$8 -11 -23 -36 -45 -51 -53 -41 -35 -22 -16 -01	58 -29 -66 -65 -65 -67 -48 -67 -43 -66 -67 -67 -67 -67 -67 -68 -68 -68 -68 -68 -68 -68 -68 -68 -68	-54 -63 -1.00 -1.10 -1.15 -1.12 -1.05 -1.11 -74 -42 -30 -20	-,40 -,90 -1,14 -1,04 -1	.29 -1.07 -1.00 96 99 95 76 76 54 46 46 41		1936363630241601 .03 .08 .10 .11	11 16 15 12 09 01 .05 .10	. 15 . 24 . 09 . 01 . 01 . 01 . 01 . 05 . 06 . 10 . 08	.5h .35 .35 .16 .09 .07 .03 .03 .04 .04 .05	.58 .41 .24 .16 .13 .06 .05 .05 .01	
0.80 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	.60 .11 .28 .36 .42 .42 .39 .30 .31 .01	.61 -34 -55 -66 -53 -76 -72 -61 -55 -46 -32 -24 -16 -01	. \$6 77 91 -1.03 72 -1.04 -1.00 96 57 38 29 10 0		.08 -1.01 -1.04 96 91 87 88 68 54 54 41		-25 -37 -35 -33 -26 -20 -05 -01 -08 -10	.20 01 11 14 11 09 03 0 .06 .09 .09	. A4 .25 .09 .04 .01 .05 .06 .08 .10	.66 .54 .35 .19 .03 .21 .11 .06 .03	.67 .60 .45 .28 .08 .13 .11 .08 .06 .04	
0.9% 8/2	0 1.5 \$.0 7.0 10.0 15.0 20.0 30.0 \$0.0 50.0 60.0 70.0 90.0 97.0	.48 .19 02 15 30 31 35 35 31 28 20 12 08	.60 21 40 51 56 57 51 45 37 26 17 10	.54 66 79 92 -1.01 87 81 74 36 30 21 08	-1.05 -1.07 -1.07 -1.06 -1.02 -1.02 -1.02 -35 -35 -36 -1.09 -1.01	.29 -1.26 -1.16 -1.06 -1.00 -1.00 -1.00 50 51 51 31 22 16		-,49 -,40 -,35 -,30 -,20 -,04 -,04 -,06 -,09 -,12 -,14	.06 11 15 15 11 09 05	.38 .11 .05 .05 .00 .01 .01 .06 .10	.48 .20 .14 .07 .07 .01 .01 .01	.54 .28 .19 .12 .09 .02 .01 0	

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TABLE IX.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.80; R = 1,000,000;  $T_c$  = 0.04 (a)  $\alpha_u$  = 2°,  $\mu^o$ , 6°, 8°, 10°

	Per-			Upper	surface				Lover	surface		
Spanwise Stations	cent			Angle	of attack				Angle	of attack		
0.10 b/2	0 1.5 7.0 15.0 15.0 30.0 \$0.0 70.0 70.0 70.0 70.0	0.66 0.67 0.67 0.67 0.67 0.67 0.67 0.67	\$0.69 15 35 50 56 57 57 60 33 27 01	60 0.66 42 60 60 60 74 71 69 74 69 74 69	8° 0.5970819583868080362510	10° 0.48 -1.04 -1.06 -1.16 -1.13 -1.10 -1.0196918570524122	20 0.17 06 14 16 20 20 21 21 18 07	.03 03 03 03 09 10 10 07 08	.16 .11 .09 .04 .01	80 	.00 .76 .57 .39 .33 .26 .20 .16 .14 .10	
0.19 b/2	0 1.5 4.0 7.0 15.0 20.0 30.0 \$0.0 \$0.0 70.0 80.0 90.0 90.0	.83 27 59 88 85 51 37 37 32 02	56 81 86 91 -1.08 95 36 50 43 35 68 08	-25 89 -1.15 -1.19 -1.16 -1.31 	-1.51 -1.45 -1.44 -1.51 -1.45 -1.51 35 41 31 20 10 06	18 -1.27 -1.52 -1.45 -1.45 -1.40 -1.21 -1.058465483628	01 66 82 11 03 03 03	66 .43 06 45 53 09 01 .04	.05 .05 .05 .05	.04 .01 .01	0286 .8060 .40 .01 .0405 .070410	
0.31 b/2	0 1.5 7.0 15.0 20.0 20.0 50.0 70.0 70.0 70.0 70.0 70.0 70.0	54 - 36 - 47 - 47 - 54 - 54 - 54 - 54 - 41 - 65 - 68	.60 20 55 68 73 82 76 80 72 51 46 36 36	.60 -48 84 94 -1.03 -1.13 -1.16 -1.11 79 53 45 33 24 06	.59 -68 -1.03 -1.15 -1.20 -1.20 -1.29 -1.29 -1.29 -1.30 35 25 14	-59 -81 -1.20 -1.31 -1.43 -1.43 -1.43 -1.43 -1.43 -1.43 -1.43 -1.87 87 59 14	12 36 36 35 35 25 24 23 23	-17 05 15 16 19 12 14 12 12 12	.40 .19 .03 01 01 05 05 05			
0-375 ъ/2	0 1.5 7.0 15.0 15.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 2	60 d 25 3 3 3 5 5 5 6 6 6 3 5 2 1 6 6 6 5 5 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	.64 41 56 76 82 90 91 82 36 30 30 30	-51 -86 -89 -1.05 -1.23 -1.26 -1.26 -1.44 44 42 27 07	-39 -1.11 -1.25 -1.33 -1.35 -1.31 75 67 61 50 36 28	.25 -1.29 -1.40 -1.42 -1.35 -1.35 -1.83 94 94 94 94 36	01 24 30 31 31 31 31 31 09 09	.30 .07 06 12 15 17 20 11 02	.49 .29 .11 .03 0 05 09 06 01	.60 .43 .16 .11 .04 01 04 01	.65 .54 .20 .21 .05 .01 01	
0.44 7/2	0 1.5 4.0 7.0 15.0 20.0 30.0 50.0 60.0 70.0 90.0 95.0	-82 -350 -57 -59 -39 -39 -39 -39 -39 -39 -39 -39 -39 -3	.69 75 87 -1.02 -1.11 -1.24 -1.26 -1.19 67 34 34 37 17 03	-50 -1.08 -1.29 -1.31 -1.30 -1.25 -1.25 -1.27 -56 -36 -24 -14	.30 -1.20 -1.20 -1.06 -1.06 97 95 91 91 58 49 37 33	.10 -1.06 -1.11 -1.04 -1.94 94 96 77 71 59 51 43	. hg . hg . hg o5 26 54 35 o5 o1 . o8 o9 . o9	.64 .39 .15 05 05 05 09 05 .05 .05	.77 .58 .34 .14 -10 -36 -10 04 .01 .06	.82 .69 .47 .29 .05 .21 .09 .04 .03 .10 .17	.85 .79 .40 .17 10 06 04 02 0	

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TABLE IX.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.80; R = 1,000,000;  $T_c$  = 0.04 - Concluded (a)  $\alpha_u$  = 2°, 4°, 6°, 8°, 10° - Concluded

	Per-			Upper	surface		 П			Lover	surface		
Spenwise stations	cent			ángle (	of attack		1 (			Angle	of attack		
502010015	0 1.5	0.50 .07	0.57 25	0.59 53	90 0.56 71	0.54 85		-0.21	0.12	6º  0.38	0.49	0.60	
0.56 b/2	4.0 7.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	22 39 51 56 55 52 49 40 25 19 04	52 70 80 85 67 51 46 35 30 20 .03	76 90 99 -1.16 -1.19 64 45 36 30 21 06	95 -1.02 -1.11 -1.24 -1.27 -1.21854437342711	-1.12 -1.19 -1.35 -1.33 -1.27 85 40 36 36 10		45 50 44 38 31 24 21 04 .01	12 27 27 29 21 18 16 13 10 03 .01	.10 07 08 08 06 06 06 05 0	.23 	.36 -17 .10 .08 .05 .05 .05 .02 -0 -01	
0.68 3/2	0 1.5 7.0 10.0 20.0 30.0 50.0 50.0 70.0 80.0 90.0	474 234 445 548 515 515 515 515 515 515 515 515 515 51	59 60 816 186 	-53 69 -1.07 -1.15 -1.15 -1.14 1.14 31 31 31 31 31	- \$2 -1.19 -1.09 -1.05 -1.05 -1.74 79 54 39 19	-1.01 -1.04 -1.04 -1.09 80 76 57 47 30 25		40 40 39 326 15 02 .08	19 02 13 17 15 13 09 01 .04	.41 .21 .06 0 0 02 0 .05 .05 .01 .10	.50 .14 .16 .09 .06 .04 .04	.58 .43 .26 .17 .14 .09 .07 .06 .06 .06 .03	
0.80 b/2	0 1.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	9.4489.4459.888.4 8	ର ମନ୍ତ୍ର ଜନ୍ମ କ୍ଷମ କ୍ଷମ ପ୍ରଥମ ପ	#80 #40 #1 #1 #1 #1 #1 #1 #1 #1 #1 #1 #1 #1 #1	20.04 -1.23 -1.23 -1.23 -1.23 -1.25 -1.25 -1.35	528651258888557587 7777777717111111111111111111		- 28 40 35 34 21 05 0 .05 .09 .10	10 10 12 10 07 07 01 .02 .09		.54 .34 .16 .10 .05 .05 .05 .06 .08	194 NA48 888555	
0.94 b/2	0 1.5 4.0 7.0 15.0 20.0 30.0 50.0 70.0 80.0 95.0	.47 .20 .01 .12 .28 .33 .34 .22 .21 .21 .20 .21 .21 .21 .21 .21 .21 .21 .21 .21 .21	9997944 111119887789999999999999999999999999999	-54 -69 -80 -93 -1.60 89 83 73 35 31 24 16 09	-1.07 -1.09 -1.04 -1.04 -1.04 51 34 25 01 0	.27 -1.30 -1.15 -1.07 -1.07 -1.07 -1.00 - 79 56 50 40		51 41 39 35 29 21 07 04	-15 -15 -15 -15 -166 06	.37 .11 .05 0 01 04 01 0 .07 .09	1.48 1.14 1.24 1.25 1.34 1.35 1.35 1.35 1.35 1.35 1.35 1.35 1.35	.54 .29 .24 .25 .25 .25 .25 .25 .25 .25 .25 .25 .25	





TABLE X.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.90; R = 1,000,000;  $T_c$  = 0 (a)  $\alpha_u$  = 2°,  $\mu$ °, 6°, 8°

Spenwise	Per-			Upper	surface.	 -	T	····	Lover	surface	 
stations	cent			Angle o	fattack	 $\Box$			Angle o	f attack	
0.10 5/2	0 1.5 1.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 90.0	% 6 111111111188278	- 0.72 - 0.05 - 0.05 - 1.40 - 1.40 - 1.40 - 1.52 - 1.55 -	6° 0.70 -16 -169 -199 -154 -52 -55 -69 -721 -721	8° 0.6941567073677168667786		0.20 -0.20 -0.4 -1.13 -1.15 -1.15 -1.23 -1.21 -1	36 36 37 07 12 16 23 36 30 08	0.51 .30 .05 .15 .10 .06 .06 .07 .11 .15 .07	8° 0.65 .44 .26 .39 .03 05 .01 05	
0.19 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 40.0 50.0 60.0 70.0 80.0 95.0	83888888888888888888888888888888888888	75 1 4 7 7 6 6 8 4 6 7 7 7 4 4 20 5 1 5 1 6 6 7 7 7 4 4 20 5 1 6 7 7 7 4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	63.26.08.12.86.12.	.53 68 99 -1.00 -1.13 		.34 .13 05 25 61 78 63 11 .01	.49 .29 .07 11 51 54 56	.60 .43 .04 -29 -555 -06 .04	.71 .35 .14 .19 .00 .01	
0.31 b/2	0 1.5 4.0 7.0 15.0 20.0 20.0 50.0 50.0 70.0 80.0 95.0	96555555555555555555555555555555555555	-55 -46 -39 -666 -7681 -87 -91 -86 -74 -34	59 - 59 - 59 - 59 - 59 - 59 - 59 - 59 -	.61 49 77 89 -1.05 -1.05 -1.05 89 49		158   395   158	-15 -06 -18 -20 -19 -18 -20 -21	.37 .18 .04 01 02 06 09 20	.63 .34 .15 .09 .06 .04 .02 .06 18	
0.375 b/2	0 1.5 1.0 19.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 95.0	\$2584886   511111 \$2584886   58868858	-63 -20 -39 -56 -65 -65 -65 -65 -65 -65 -65 -65 -65	645 KB 515 648 KB 515	.54 -75 -82 -91 -1.00 -1.11 -65 -73 -73 -59 -51		1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	.24 0 14 19 21 26 30 46 40	.43 .20 .04 04 07 13 20 35 35		
O.44 b/2	0 1.5 7.0 10.0 15.0 20.0 30.0 50.0 70.0 80.0 95.0	74 - 27 - 27 - 37 - 37 - 37 - 38 - 38 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	.80 51 66 791 97 97 97 45 29	657708886867676863750415	. 48 81 -1. 01 93 86 84 76 79 77 77 59 59 57		.25 04 14 31 63 48 34 34 22	0 -15 -40 -71 -74 -18 -01 -02 -08	.57 .35 -01 -22 -5* 75 39 04	.66 .49 .14 .10 .45 .68 .17 .06 .05	

TABLE X .- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.90; R = 1,000,000;  $T_c = 0$  - Concluded (a)  $\alpha_u = 2^{\circ}$ ,  $4^{\circ}$ ,  $6^{\circ}$ ,  $8^{\circ}$  - Concluded

	Per-			Upper	surface					surface		
Spenwise stations	cent chord				f attack					f attack	-	
0.56 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	0.45	9 51 11 4 9 8 8 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	6° 0.54 35 567 759 955 995 953 533 299 03	8 0.55 0.55 0.55 0.55 0.55 0.55 0.55 0.5		2°	0.10 14 23 23 21 13 23 13 23 23 23 23 23 23 23 2	%   584444   4855	80 0.41 18 0.80 0.80 0.80 0.80 0.80 0.80 0.80		
0.68 b/2	0 1.5 4.0 10.0 15.0 20.0 40.0 50.0 60.0 70.0 95.0	9445888888888884884488448844884488448844	89988EEEE345544	8382922255543848	.51 -52 -85 -85 -85 -83 -76 -63 -59 -51 -44 -40		21 42 43 44 37 30 16 01 .04	-10 -13 -22 -26 -24 -20 -16 -05 -01 -03	.30 .08 .08 05 11 12 08 00 00 00 00	.42 .21 .05 .03 .05 .07 .06 .04 .09 15		
o.8o ъ/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	63.42889854998488319 66.11.11.11.11.11.11.11.11.11.11.11.11.1	\$1995000005448558 	598 567 686 685 685 685 685 685 685 685 685 685	- 54 - 59 - 59 - 100 - 1		22 39 40 35 29 24 01 .06 .10 .12	19 19 21 16 13 07 01 .07 .10	03 08 06 06 06 01 .01 .01 .04 .09	.44 .21 .05 .01 .05 .03 .03		
0.94 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0 95.0	.51 0 -15 -25 -31 -36 -38 -33 -23 0 09 .12	.62 09 30 46 57 57 59 59 05 05 09	.64 34 47 66 63 45 32 24 06	.51 64 74 83 81 82 75 54 47 43 27 25		47 43 41 36 25 09 03 03 13 15	0 15 19 20 16 14 09 06 11 .13	.26 .03 .04 .07 .07 .07 .05 .05 .08 .06	.38 01 05 05 06 08 08 08 03 03		ACA

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TABLE XI.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.90; R = 1,000,000;  $T_c$  = 0.03 (a)  $\alpha_u$  = 2°, 4°, 6°, 8°

Sme med co	Per-			Upper	surface		П			Lower	murface	 
Spanwise Stations	cent				fattack						attack	 
0.10 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0 95.0	2° 0.69 .19 05 16 22 28 33 36 39 47 56 55 11	0.74 022 36 40 41 51 51 51 69 21	6° 0.74 20 51 53 53 53 60 61 61 51 53	8° 0.69417070676670676679863935			- 10 - 10 - 11 - 12 - 14 - 16 - 21 - 28 - 38 - 41 - 04	0.39 .16 .03 -01 -02 -06 -12 -18 -13 -24	0.54 -31 -17 -19 -59 -59 -76 -76 -76 -76 -76 -76 -76 -76 -76 -76		
0.19 b/2	0 1.5 4.0 7.0 15.0 20.0 20.0 40.0 50.0 70.0 80.0 95.0	81 86 86 86 86 86 87 87 87 87 87 87 87 87 87 87 87 87 87	.84 26 54 63 85 85 87 64 69 72 37 13	.69 77 81 84 96 77 75 24 21	-55 -71 -99 -1.03 -1.05 -1.15 -1.16 -99 -81 -81 -28 -25			.36 .15 -03 -22 -57 -75 -58 09	.65 .81 .20 .05 .41 .80 .61 .05 .05	.75 .55 .55 .69 .27 .62 .11 .01	.84 .66 .21 .21 .31 .01	
0.31 b/2	0 1.5 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	503894 * K626445746	.60 06 41 75 86 91 86 91 86 21 10	.62 24 56 65 65 91 99 -1.00 96 90 70 25 25	64 -12 -15 -65 -1.05 -1.			13 25 32 28 25 23 23 23 23	.11 11 21 22 19 16 18	.31 .10 04 06 06 06 10 11 22 23	.47 .27 .05 .05 .01 02 18	
0.375 b/2	0 1.5 4.0 7.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	.58 .08 16 36 46 59 65 82 82 31 04 10	.66 -36 -36 -57 -83 -95 -95 -95 -95 -31 -31	.63 46 55 75 85 96 96 96 82 56 49 40	- 74 - 75 - 99 - 107 - 111 - 102 - 81 - 74 - 63 - 56			39 39 39 39 35 35 35 35 35	24 0 118 - 118 - 20 - 24 - 26 - 25 - 25 - 26 - 25 - 26 - 25 - 26 - 25 - 26 - 26 - 26 - 26 - 26 - 26 - 26 - 26	.41 .19 .04 04 07 13 19 36 41	.17 .09 .05 .04 .10 .28 .35	
0.44 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 50.0 60.0 70.0 90.0 95.0	.82 10 31 59 75 83 -1.00 .06 .11 64 34 34	.76 37 79 70 94 -1.00 96 70 60 41 31 26	.65 63 77 87 91 91 76 73 69 61	.51 -84 -1.00 91 85 74 74 88 72			.36 .06 .03 .51 .57 .54 .51 .53 .53 .53 .54 .53 .54 .54 .54 .54 .54 .54 .54 .54 .54 .54	.54 .66 .09 .35 .35 .70 .82 .95 .06	.68 .44 .25 .06 19 53 55 .04 .05	.77 .79 .39 .21 .04 .41 .49 .33 .01	

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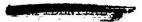


TABLE XI.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.90; R = 1,000,000;  $T_c$  = 0.03 - Concluded (a)  $\alpha_U$  = 2°, 4°, 6°, 8° - Concluded

	Per-			Upper	surface	 				Lover	aurface	 
Spanwise stations	cent			Angle o	of attack					Angle	f attack	
stations	chord	20	Ψo	6°	80		†	20	10	60	Bo	
0.56 b/e	0 1.5 4.0 10.0 15.0 20.0 30.0 50.0 50.0 70.0 80.0 95.0	0.48 .06 22 30 67 77 77 65 30 30 30	0.54 16 41 57 65 83 87 90 85 20 20 06	0.55 30 52 66 75 89 95 96 91 57 31 22 14 06	0.5½497086 -1.04 -1.10 -1.05 -1.0544302218			-0.17 -43 -55 -49 -46 -37 -29 -21 -02 -09 -23	0.07 -18 -29 -29 -26 -25 -21 -19 -05 -01	0.24 01 15 16 16 14 15 06 06	0.36 .14 .01 .05 .06 .09 .10 .10 .10	
0.68 b/2	0 1.5 1.0 10.0 10.0 10.0 10.0 10.0 10.0 10	.16 .15 -20 -36 46 56 56 45 17 17 10	.57 08 56 56 77 75 74 75 40 26 15 05	.57 -30 -61 -77 -77 -77 -74 -50 -331 -25 -21	.68 51 90 90 85 85 81 65 57 49			24 46 45 45 37 30 15 04 10	.10 11 21 25 22 19 12 04 .08	.26 .06 09 13 13 13 10 04 01 02 09	44 .00 .04 .05 .06 .06 .07 .12	
0.80 b/2	0 1.5 7.0 10.0 15.0 20.0 20.0 50.0 70.0 80.0 90.0	.61 .16 10 36 45 51 44 39 33 24 06	.65 15 37 53 61 71 79 70 68 65 32 16 07	. 58 - 39 - 59 - 59 - 87 - 85 - 79 - 79 - 69 - 52 - 16 - 29 - 16	.46 65 81 96 -1.02 97 99 73 61 52 45 35			23 39 35 28 21 03 .03 .01 .11	.13 06 17 20 15 11 04 .03 .08 .10	.31 .10 05 09 07 07 07 08 .08	.43 .24 .06 0 01 04 02 0 .03 .09	
0.94 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	.52 .24 04 12 22 27 35 37 34 31 26 21	.64 10 29 45 57 58 65 56 56 56 56 56 56	.61 35 50 63 77 76 71 66 65 46 23 23 05	.54 64 75 93 94 81 63 54 41 34 23			- 45 - 41 - 40 - 35 - 30 - 20 - 06 0 - 15 - 18	.04 14 17 20 15 14 09 06 07 11 .13 .15	.05 .09 .09 .09 .09 .09 .05 .05 .05	.43 .12 .05 01 05 06 06 06	

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TABLE XII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000; PROPELLERS REMOVED (a)  $\alpha_{\rm U}$  = 2°. 4°. 6°, 8°, 10°, 12°

<del></del>				Upper su	riace						Lower su	rface		
Spanyise stations	Per-			Angle of	attack						Angle of			
	obord	20	μo	60	в°.	10°	120	Ц	50	¥°	6°	80	10°	120
о.10 ъ/2	0 1.50 7.00 19.00 30.00 50.00 70.00 70.00 70.00 70.00 70.00 70.00 70.00 70.00 70.00 70.00	0.554 0.554 0.554 0.554 0.535	0	0	0.19689.53874889.541.539.22.550	-0.23 -1.530 -1.			0.54 	0. No. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.	୍ଟି ବିଷ୍ଟ୍ର ପ୍ରୀ ବିଷ୍ଟ୍ର	গুন   অনুন্ত হত হ হ   হব	0.65 .53 .35 .23 .23 .14 .12 .19 .10 .04	0.65 .63 .45 .37 .32 .21 .18 .15 .15
0.19 ъ/2	0 1.5 7.0 15.0 20.0 30.0 50.0 50.0 60.0 80.0 90.0	- 40 - 17 - 37 - 40 - 43 - 48 - 36 - 31 - 23 - 27 - 27 - 27 - 27	9955555 	17 14 15 16 16 16 16 16 16 16 16 16 16 16 16 16	- 39 -1.77 -1.13 -1.14 -1.92 55 36 20 02	1.27 9.78 1.1.31 1.1.31 1.1.4.09 1.0.00 1.0.00 1.0.00 1.0.00 1.0.00 1.0.00 1.0.00 1.0.00 1.0.00 1.0.00 1.0.00 1.0.00 1.0.00 1.0.00 1.0.00 1.0.00 1.0.00 1.0.000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.0000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.000 1.0.00000 1.0.00000 1.0.00000 1.0.00000 1.0.00000 1.0.00000000	**************************************		- 89 - 13 - 89 - 133 - 138 - 155 - 155 - 155 - 155 - 155 - 155	39 15 1054 129 149 104 108 208	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	.60 .55 .34 .210 .01 .01 .02 .03 .03	88   99.00   88   85.00   88.0	.32 .64 .61 .85 .35 .19 .14 .09 .10
0.31 b/2	0 1.5 7.0 19.0 19.0 20.0 30.0 40.0 50.0 70.0 80.0 95.0	.48 37 41 36 36 36 38 38 29 00	1 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	\$5000000000000000000000000000000000000	131 1133 1133 1133 1133 1133 1133 1133	13 -2.14 -1.64 -1.27 -1.12 99 77 65 54 34 34 30 00	198985335895355868		1034 1034 1034 1034 1034 1034 1034 1035	.05 -05 -11 -11 -11 -10 -10 -10 -10 -10	୍ଟିଲ୍ (ଚନ୍ଦ୍ର ଅଧିକ୍ର ଓଡ଼ି । ଖୁ ଓଡ଼ି   ଜୁନ୍ଦର ଅଧିକ୍ର ଓଡ଼ି   ଖୁ ଓଡ଼ି	.60 .45 .45 .17 .14 .10 .05 .04	4814 HH568	.55 .65 .40 .35 .27 .21 .18 .13 .09
0.375 b/2	0 1.5 2.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	- 150 - 150 - 143 - 143 - 143 - 136 - 137 - 137	.48 .60 .63 .66 .66 .65 .66 .75 .44 .63 .63 .63 .63 .63 .63 .63 .63 .63 .63	.18 -1.20 -1.01 87 79 72 52 43 35 29 20 05	- 42 -1.89 -1.37 -1.24 -1.14 -1.00 89 49 40 31 21 05	-1.26 -2.69 -1.83 -1.59 -1.42 -1.21 -1.06 68 95 43 23 23 06	2.63 3.35 1.71 1.43 1.75 1.75 1.75 1.75 1.75 1.75 1.75 1.75		- 01 - 21 - 20 - 20 - 16 - 05	.31 .08 05 08 11 11 09 03 0	.51 .30 .04 .04 .04 .04 .04 .04 .04		.50 .56 .40 .30 .25 .15 .15 .10	.33 .60 .51 .42 .35 .26 .22 .15 .15
о.44 в/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	- 59 - 73 - 74 - 75 - 75 - 75 - 75 - 75 - 75 - 75 - 75	- 49 74 73 767 59 35 38 39 25 39 39	.04 -1.36 -1.16 -1.06 -1.94 83 78 61 51 43 37 27 19 05	75 -2.16 -1.52 -1.39 -1.04 94 58 39 19 05	-1.87 -2.04 -2.06 -1.77 -1.23 -1.10 82 53 41 19 03	-3.35 -3.94 -2.66 -2.81 -1.84 -1.24 -1.24 -1.76 -1.76 -1.31 -1.76 -1.31 -1.06		.08 14 23 30 36 39 19 11 05	.43 .19 .01 09 16 17 06 02 08	.59 .43 .22 .10 .01 06 04 01 .01 .05	.57 .57 .41 .27 .17 .05 .03 .04 .05 .07	.54 .63 .54 .29 .14 .10 .09 .10 .09 .10	.01 .62 .64 .54 .45 .26 .18 .11 .12 .12

TABLE XII. - PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000; PROPELLERS REMOVED - Continued (a)  $\alpha_u$  = 2°, 4°, 6°, 8°, 10°, 12° - Concluded

	Per-			Upper	surface						Lower	surface		
Spanwise	cent			Argle o	f attack							f attack		
stations	chord	20	ьo	6°	8º	100	120	_	0	40	60	8º	100	15 <sub>0</sub>
0.56 ъ/2	0 1.5 1.0 10.0 15.0 30.0 30.0 50.0 50.0 90.0 90.0	0.47 1.33 1.33 1.43 1.43 1.33 1.33 1.33 1.33	0.46 1.49 1.66 1.54 1.54 1.54 1.54 1.54 1.56 1.56 1.56 1.56 1.56 1.56 1.56 1.56	0.29 0.29 0.29 0.29 0.29 0.29 0.29 0.29	-0.25 -1.57 -1.34 -1.22 -1.05 91 79 55 37 37 39 06	-0.95 -1.74 -1.75	-1-52 -1-53	-:	26 26 26 21 16 13 01 01	0.26 .03 09 10 11 11 09 07	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.60 .44 .24 .17 .14 .09 .06 .06	0.59 .56 .38 .29 .24 .18 .15 .12	0.51 .64 .50 .42 .35 .27 .29 .19
0.68 b/2	0 1.5 7.0 10.0 20.0 30.0 40.0 70.0 80.0 90.0	. 45 . 04 . 22 . 33 . 33 . 33 . 33 . 33 . 33 . 33	.54 57 57 57 57 54 33 33 26 21 30	.88 95 88 86 56 44 31 31 31 31 31	25-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	-1.08 -2.37 -1.83 -1.52 -1.36 -1.18 -1.03 83 64 52 38 26 15	-2.25 -3.37 -4.37 -4.93 -4.21 55 39 39 39 39 39 39		25 26 24 22 26 16	233 - 578884 - 658899	.47 .27 .06 .04 .02 .05 .07 .10	.20 .26 .18 .16 .12 .11 .11 .12 .10	.50 .53 .37 .28 .29 .20 .17 .15 .14 .10	.31 .57 .39 .34 .26 .22 .19 .16 .15
о.80 ъ/2	0 1.5 4.0 7.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	.53 .05 14 25 28 31 32 32 27 25 20 16 11	.53 37 48 51 52 50 41 35 25 21 03	.21 91 88 69 56 43 36 36 30	-1.57 -1.57 -1.28 -1.14 -1.00 87 60 51 34 34 01	-1.42 -2.33 -1.69 -1.43 -1.08 91 79 48 37 26 26 02	-2.70 -2.26 -2.19 -1.81 -1.57 -1.82 66 51 38 51 38 51	1111110	21 27 21 16 13	06 05 05 05 05 05 01 05 05	- 145 2 11.665.64 665.999.99	.56 .42 .85 .15 .11 .19 .10 .11	.53 .51 .36 .27 .24 .19 .11 .13 .11	.38 .25 .37 .32 .25 .16 .15 .12 .09
0.94 17/2	0 1.5 1.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	.39 .16 03 15 20 21 25 20 21 21 21 09 .01	.56 20 32 39 40 38 34 34 26 22 16	.43 63 65 59 55 44 29 26 19 11	.01 -1.18 -1.04 80 67 55 44 41 29 20 12	74 -1.93 -1.39 -1.22 -1.05 87 71 54 38 31 21 12	-1.80 -2.26 -1.84 -1.56 -1.30 -1.0686645233201001		40 28 29 20 21 20 21 30 30 30 30 30 30 30 30 30 30 30 30 30		.33 12 .05 .01 01 01 01 01 03 .04	.49 .12 .09 .05 .05 .05 .05 .05 .05 .05 .05 .05 .05	.52 .38 .30 .21 .17 .11 .09 .09 .09	.47 .39 .30 .24 .18 .13 .11 06

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TABLE XII. - PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000; PROPELLERS REMOVED - Continued (b)  $\alpha_u$  = 14°, 16°, 18°, 20°

Coday	Per-			Upper a	urface	 1	1		Lower s	urface	 
Spanwise stations	cent			Angle of	attack				Angle of	attaok	 
0.10 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0 90.0	14:00 14:00	16° -2.15 -3.33 -2.32 -1.89 -1.56 -1.318869133333333169	2.92 -2.92 -2.96 -2.13 -1.77 -1.44 -2.93 72 35 35 14 25 14	20° -3.65 -4.21 -2.90 -2.27 -1.84 -1.47 -1.01 93 77 61 27 20		114° 0.60 .70	.50 .73 .61 .52 .46 .37 .33 .25 .25		71 	
0.19 5/2	0 1.5 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0	7.64 14.69 14.69 14.79 14.41 1.89 1.72 1.72 1.72 1.72 1.72 1.72 1.72 1.72	5.91 5.91 5.92 5.92 5.92 5.92 6.93	-6.52 -5.70 -3.58 -2.63 -2.81 -1.67 74 53 15 04 01	-1.97 -2.64 -1.36 -1.38 -1.37 -1.24 90 64 32 32 21		.02 .60 .69 .58 .45 .27 .18 .13	38 .51 .74 .67 .36 .26 .26 .17 .16	-82 .39 .77 .74 .62 .42 .30 .19 .19	-55 .49 .79 .74 .62 .42 .31 .19 .17	
0.31 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 70.0 80.0 90.0	2.88 -2.53 -1.77 -1.88 89 89 89 89 89 89	747441188485488548865	4.517.33.65.81.75.75.86 -5-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	-5.00 -5.17 -3.47 -2.23 -1.79 -1.45 -1.67 61 58 39 36		.40 .69 .59 .51 .36 .28 .24 .17	.33 .70 .88 .59 .54 .35 .29 .20	-01 .68 .73 .66 .59 .49 .38 .32 -19	-15 -64 -75 -68 -63 -51 -41 -34 -19 -02	
0.375 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 50.0 50.0 60.0 70.0 80.0 95.0	3.78 -1.65 -2.88 -2.05 -1.39 -1.36 -1.36 -1.36 -1.36 -1.36 -1.36	75.36.97.45 	557799777 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4.89 -5.97 -3.35 -1.13 -1.09 -1.09 -1.58 -1.58 -1.58		.04 .56 .56 .59 .44 .35 .30 .22 .19	27 .53 .63 .57 .51 .34 .24 .20	47 .51 .68 .61 .55 .43 .35 22 .16	68 .46 .69 .64 .37 .22 .16	
0.44 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 50.0 50.0 60.0 90.0	7.13 4.88 7.54 4.50 -1.61 -1.38 76 78 16 29 16 03	7.74 7.74 7.74 7.74 7.74 7.74 7.74 7.74	7.84 7.74 7.73 7.00 7.00 7.00 7.00 7.00 7.00 7.00	-3.13 -1.12 -1.01 96 95 -1.05 -1.04 93 64 53 39 36		53 -51 -71 .54 -35 -35 -19 .16 .15 5 .01	-56 -57 -76 -68 -57 -58 -58 -58 -58 -58 -58 -58 -58 -58 -58	-33 .62 .77 .88 .98 .99 .19 .10	- 27 - 63 - 79 - 69 - 59 - 59 - 38 - 29 - 19 - 19 - 19 - 19 - 19 - 19 - 19 - 1	

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TABLE XII. - PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000; PROPELLERS REMOVED - Concluded (b)  $\alpha_{\rm U}$  = 14°, 16°, 18°, 20° - Concluded

	Per-			Upper	surface						surface		
Spanvise	cent				f attack						fattack		
stations	chord	24°	16°	18°	20°			11.°	16°	18°	20°		
0.56 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 90.0 90.0	######################################	74.88 74.89 74.99 74.70 74.70	-1.23 -1.41 -3.02 -2.45 -2.03 -1.64 -1.34 -1.01 80 64 51 30 17 12	-1.89 -1.79 -2.57 -2.12 -1.69 -1.36 -1.04 64 51 33 22 17		-	.32 .68 .58 .51 .44 .35 .29 .29 .20	0.17 .68 .65 .56 .50 .40 .34 .29 .19	0.06 .67 .60 .53 .44 .36 .31 .19	-0.09 .65 		
0.68 b/2	0 1.5 4.0 7.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&&	\$7.79.99.558.49.4 \$7.79.99.558.49.4	2977853884107513628418	\$5.00 \$5.00		-	.13 .55 .46 .41 .33 .27 .19 .16 .11	349 55146 379 888 888 888 888 888 888 888 888 888 8	-67-1 -67-1	56 .46 .56 .51 .41 .35 .26 .21 .16		
o.80 b/2	0 1.5 4.0 7.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	-4.17 -3.90 -2.70 -2.16 -1.87 -1.51 -1.93 73 73 539 25 13 07	-5.68 -4.72 -3.16 -2.49 -2.10 -1.67 -1.36 -1.00 75 39 25 18 14 13	-7.16 -5.45 -2.76 -2.30 -1.80 -1.46 -1.05 58 55 37 22 19	75.44 -3.19 -2.16 -1.71 -1.62 -1.15 -1.11 86 73 61 50 43		-	.12 .55 .55 .38 .30 .21 .20 .16 .13	- 20 - 50 - 56 - 53 - 25 - 36 - 26 - 28 - 20 - 10 - 50	- 56 - 42 - 58 - 54 - 49 - 29 - 29 - 29 - 21 - 16 - 10 - 05	- 25 - 54 - 60 - 49 - 39 - 25 - 25 - 25 - 25 - 25 - 25 - 25 - 25		
0.94 7/2	0 1.5 1.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	-3.07 -2.83 -2.28 -1.54 -1.22 -1.00 73 51 20 00	-4.49 -3.55 -2.73 -2.15 -1.75 -1.37 -1.11 79 60 44 33 20 14 11	-6.00 -4.23 -3.14 -2.42 -1.94 -1.50 -1.85 64 47 30 24 21	-2.54 -1.66 -1.18 87 74 74 68 64 57 46 41			.24 .53 .45 .38 .30 .22 .16 .14 .08	01 01 57 52 36 28 20 10 06 03 02	33 .57 .55 .47 .40 .31 .23 .19 05	.19 .55 .49 .42 .35 .26 .18 .13 .04 .01 .08	N	

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TABLE XIII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.080; R = 1,000,000; PROPELLERS REMOVED (a)  $\alpha_{\rm U}$  = -2°, 0°, 2°, 4°, 6°, 8°

	Per-				surface					Lover	surface		
Specurise stations	cent chord	-20	00	Angle o	f attack	6°	80	-2°	00	Angle o	attack	60	80
0.10 b/2	0 1.5 4.0 7.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 95.0	0.43 .38 .35 .01 05 14 19 25 26 27 27 27 27	0.55 .26 .04 10 16 24 28 33 33 34 31 29 25	0.65 .06 -16 -28 -39 -41 -45 -45 -39 -33 -39 -31 -39 -37 -07	0.67 16 37 59 50 55 57 56 36 28 28	0.65 41 60 71 70 71 72 69 70 54 40 31	0.59 69 81 95 85 85 75 75 71 36 26	-0.3k 52 50 k7 k1 32 27 25 21	-0.11 -34 -37 -36 -35 -35 -34 -26 -25 -17	0.15 07 18 21 21 24 25 25 20 11	0.33 .11 03 07 09 13 15 16 12	0.52 .28 .31 .05 .03 .03 .06 .06 .05 .01	0.64 ,43 ,18 ,14 ,08 ,04 ,04 ,02 ,05
0-19 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 90.0	-53 -41 -10 -02 -21 -35 -35 -35 -35 -35 -31 -28 -24 -14	.65 .25 .25 .27 .22 .36 .49 .45 .44 .34 .28 .28 .28	.71 04 33 48 60 75 54 45 31 21 21	-66 -37 -62 -73 -81 -97 -64 -61 -33 -44 -35 -24 -10	.53 -72 -97 -1.00 -1.05 -1.21 64 61 49 36 25 10	.37 99 -1.26 -1.29 -1.41 75 57 57 34 23 10	- 15 - 50 - 45 - 46 - 51 - 50 - 40 - 51	12 31 46 52 51 48 55 26 26	.21 0 21 64 52 49 10 02	-03 -29 -61 -16 -04 -01	.60 .40 .16 .05 .38 .26 .10 .01	.69 .56 .34 .14 12 06 .06 01
0.31 ъ/2	0 1.5 2.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 95.0	.29 .29 .02 -10 -17 -26 -30 -32 -36 -34 -31 -28 -24	-41 -17 -11 -23 -36 -41 -42 -41 -39 -31 -24 -91	.53 .06 .38 .49 .55 .68 .59 .55 .75 .75 .75 .75 .75 .75 .75 .75 .75	-55 -65 -66 -81 -86 -76 -71 -51 -35 -35 -35 -35	.51 -64 -94 -1.03 -1.05 -1.15 -1.15 -1.06 -99 -47 -36 -28 -09	.49 85 -1.15 -1.25 -1.25 -1.26 -1.26 -1.20 -1.00 79 58 43 29 17	-55 -71 -85 -74 -59 -36 -36 -22 -38 -68 -68	- 36 - 60 - 56 - 51 - 39 - 35 - 23 - 23	0 1.33 -333 -330 -347 -487 -21 -06	.25 .03 .12 .15 .15 .17 .18 .16	.45 .23 .05 0 .01 .05 .07 .10	.59 .41 .21 .13 .11 .06 .01 .01 .01
9.375 b/2	0 1.5 4.0 7.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0	.23 .40 .16 .01 .21 .29 .37 .33 .30 .26	.41 .25 .01 .18 .27 .37 .41 .38 .34 .34 .06	296 298 361 361 355 355 357 371 371 370 370	.58 60 76 93 90 56 34 31 32	-86 -91 -1.13 -1.13 -1.13 -1.67 -39 -1.10 0	-37 -1.13 -1.23 -1.15 -1.16 -1.15 -1.11 84 75 66 61 55 47	75 99 85 82 68 47 29 15 10	- 44 - 69 - 64 - 79 - 35 - 46 - 35 - 14 - 14 - 05	্ত্রপু নালালালালালালালালালালালালালালালালালালাল	.30 .06 09 15 17 21 21 06 .09	.49 .26 .00 .00 .00 .00 .00 .00 .00 .00 .00 .0	.58 .39 .21 .12 .06 0 05 06 06
0.44 b/2	1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	. \$0 . \$2 . 16 35 \$1 \$2 36 33 33 23 21 14	.55 .24 01 23 53 56 46 41 30 23 23 23 23	.66 12 35 55 80 54 54 54 54 54 54 55 56 55 55 55 55 55 55	.63 54 71 86 95 -1.10 -1.11 -1.00 49 45 39 28 17 05	.49 93 -1.02 -1.12 -1.11 -1.10 84 60 55 41 29 19	.30 -1.16 -1.14 -1.16 -1.05 85 80 80 75 66 77 50 41	60 90 54 36 36 42 41	31 53 53 44 35 41 45 37	.15 11 26 41 57 50 40 35 18 04	.44 .19 0 19 43 53 20 08 01 .05	.60 .39 .20 .04 -21 -34 -14 05 01 .05	.68 .54 .34 .16 06 23 14 09 06 03 15





TABLE XIII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.80; R = 1,000,000; PROPELLERS REMOVED - Continued (a)  $\alpha_{\rm U}$  = -2°, 0°, 2°, 4°, 6°, 8° - Concluded

	Per-			Upper	surface			L			surface		
Spanwise	cent				f attack						f attack	6°	8°
stations	chord	-2°	00	2°	40	60	80	-26	00	20			
0.56 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 95.0	0.21 .31 .09 .05 .14 .21 .24 .26 .27 .25 .29 .15	0.35 .19 .09 .29 .35 .35 .35 .36 .35 .26 .21 .04	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.54 38 57 81 51 52 35 35 35 35 35 35 35 35	0.49 66 85 94 -1.01 -1.02 60 45 30 21 01	0.41 89 -1.09 -1.15 -1.26 -1.26 -1.15 -50 -42 -36 -13 -05	-0.69 90 83 83 52 39 31 18	-0.51 75 66 57 45 35 29 17 05 .01	-0.06 31 37 36 32 28 24 21 11 02 .02	0.24 01 13 16 15 14 12 11	0.43 .20 .01 .01 .04 .05 .05	0.5% .29 .1% .07 .04 .01 0 01 .01
o.68 b/2	0 1.5 1.0 7.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	06 .50 .25 .31 .02 07 14 20 22 21 19 15 13	.13 .39 .09 05 14 22 27 31 31 28 24 21 21	. 46 .13 .21 .35 .43 .46 .50 .51 .44 .39 .35 .20 .15	.58 29 83 78 75 69 75 69 31 24 15	.52 64 96 -1.05 -1.11 -1.09 -1.03 -1.07 74 30 30 11	. %1 86 -1.12 -1.05 -1.05 -1.03 99 81 66 56 46 37 37 21 16	-1.15 -1.21 -1.11 -1.05 -66 -41 -25 07 02 .05	90 -1.02 86 71 50 32 22 07 .01 .06 .10	21 36 35 39 23 17 01 .04 .09 .11	.23 .01 10 14 12 11 06 	.42 .23 01 .01 0 01 0 .03 .06 .10	.52 .33 .18 .10 .08 .05 .05 .05 .05 .05 .05
0.84 b/2	0 1.5 4.0 7.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0 95.0	.19 .50 .30 .16 .08 03 17 17 17 15 13 09 09	.35 .42 .17 .04 09 15 21 22 24 19 16 11	.60 .12 13 27 35 41 44 40 37 34 28 25 15	.62 -29 -51 -66 -70 -66 -56 -51 -45 -30 -21 -13 -09	. 174 774 899 -1.00 -1.06 97 94 57 38 29 20 10 01	.33 -1.00 -1.17 -1.18 -1.11 -1.06 99 72 55 43 24 12	89 86 73 66 53 21 11	88 42 27 11 04 -02 -07	26 36 31 26 19 04 .09 .04	.21 .01 10 11 06 06	. 43 .24 .08 .03 .01 .04 .06 .08 .10	.18 .10 .10 .05 .05 .05 .06 .09 .10
o.94 b/2	0 1.5 4.0 7.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	.05 .50 .35 .20 .11 .03 05 12 16 18 15 11	.12 .44 .26 .02 06 19 20 20 16 11 10 08	.47 .20 .01 14 29 33 34 30 26 21 18	.63 15 34 45 51 51 22 45 40 34 26 15 08	.54 62 76 88 81 76 68 40 31 24 17 08	.43 -1.00 -1.05 -1.06 -1.03 96 90 49 31 22 14 06	54 52 53 53 45 45 36 36 26	91 85 63 46 34 19 09	52 42 39 35 29 02 02 02 02	-06 -10 -13 -14 -12 -10 -06 -03 -07 -11 -12 -14	.36 01 03 01 03 01 03 01	.48 .23 .15 .09 .03 .02 .03 .04 .07

3

TABLE XIII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.80; R = 1,000,000; PROPELLERS REMOVED - Continued (b)  $\alpha_u$  = 10°, 12°, 14°, 16°, 18°, 20°

	Per-			Upper	surface						Lower	surface		
Spanwise stations	cent				f attack		10	1				r etteck		
о.10 ъ/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	10° 0.49 -1.00 -1.04 -1.15 -1.10 -1.06 -1.0095835670432520	12° 0.39 -1.20 -1.26 -1.34 -1.26 -1.34 -1.27 -71 -71 -75 -75 -38 -33	14° 0.26 -1.36 -1.50 -1.42 -1.41 -1.43 -1.22 -1.07 -93 -86 -81 -84 -76 -55	16° 0.14 -1.43 -1.36 -1.37 -1.36 -1.24 -1.16 -1.06 -1.009389816658	18° 0.01 -1.40 -1.38 -1.34 -1.29 -1.26 -1.21 -1.16 -1.11 -1.0576	20° -0.11 -1.41 -1.36 -1.36 -1.39 -1.25 -1.22 -1.16 -1.09 -1.038274		10°	12° 0.81 .65 .37 .32 .24 .11 .11 .11	0.85 .72 .53 .38 .29 .24 .18 .11	.61 .52 .45 .36 .30 .25 .20 .18	18° 0.92 .86 .68 .57 .52 .35 .29 .24 .20	20°
0.19 8/2	0 1.50 7.00 15.00 20.00 20.00 70.00 70.00 95.00	.28 -1.18 -1.27 -1.20 -1.16 -1.10 -1.10 -1.60 76 60 47	01 -1.25 -1.22 -1.07 -1.06 -1.06 -1.04 -1.04 -1.04 -1.04 -1.04 -1.04 -1.04 -1.04 -1.04	-21 -1.25 -1.25 -1.04 -1.03 -1.05 -1	-37 -1.21 -1.20 -1.04 -1.04 -1.04 -1.01 -1.04 -1.01 -78 -78 -78	57 -1.14 -1.13 -1.09 -1.10 -1.11 -1.12 -1.00 89 85 75 71	76 -1.15 -1.12 -1.13 -1.13 -1.16 -1.17 -1.05 91 89 80 78		7.4 .66 .45 .05 .05 .05 .05 .05 .05 .05 .05	.76 .74 .57 .39 .16 .03 .03	.75 .19 .64 .46 .26 .10 .05 .04 .01	.74 .84 .73 .97 .19 .11 .04 .04	.89 .86 .45 .25 .17 .08 .05	.65 .87 .87 .71 .53 .31 .22 .10 .06
0.31 þ/2	0 1.5 4.0 70.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 90.0	.36 -1.00 -1.30 -1.32 -1.28 -1.28 -1.14 -1.00 55 55	.26 -1.12 -1.21 -1.18 -1.17 -1.16 -1.12 -1.00 92 81 75 65	.14 -1.16 -1.13 -1.06 -1.06 -1.04 98 89 77 61 50	.05 -1.04 -1.04 -1.04 99 89 89 89 89 57	09 -1.00 98 -1.01 84 80 79 76 71 70 65	16 -1.06 -1.00 94 92 86 81 81 79 75 75 75 68		.30 21 11 .06 .00	.73 .59 .39 .31 .25 .18 .11 .06	.76 .66 .38 .32 .24 .15 .10	.80 .73 .56 .47 .41 .31 .23 .15 .02	.81 .80 .64 .53 .46 .36 .26 .20 .09	.84 .85 .59 .59 .54 .43 .34 .25
0.375 b/2	0 1.5 1.0 10.0 15.0 20.0 30.0 50.0 70.0 80.0 95.0	-1.25 -1.16 -1.10 -1.10 -1.05 -1.00 -1.05 -1.00	.06 -93 -97 -95 -88 -88 -84 -85 -55	193 - 83 - 77 - 76 - 76 - 76 - 76 - 76 - 76 - 7	20 T T T T T T T T T T T T T T T T T T T	- 35 - 72 - 72 - 70 - 70 - 70 - 70 - 70 - 68 - 69 - 68 - 69	-51 -74 -74 -72 -72 -72 -72 -71 -71 -70 -69		.61 .89 .30 .21 .15 .06 .06	.66 .56 .59 .29 .23 .12 .06	.66 .60 .35 .28 .19 .10 06 21	.66 .66 .51 .41 .34 .23 .14 .01 05	.66 .70 .78 .48 .12 .29 .21 .05 .02 .22	.63 .71 .61 .54 .46 .34 .26 .09 .01
0.44 b/2	0 1.5 7.0 15.0 20.0 30.0 50.0 70.0 80.0 90.0 90.0	15 1888 174 179 1888 174 179 179 179 179 179 179 179 179 179 179	57.77.79.66.66.66.66.88.88.44.4	- 11 - 69 - 66 - 66 - 66 - 66 - 66 - 68 - 68 - 68	- 26 - 26 - 26 - 26 - 26 - 26 - 26 - 26	43 65 65 65 65 66 66 66 56	- 60 - 69 - 69 - 69 - 69 - 69 - 69 - 69 - 69		.68 .61 .54 .65 .65 .65 .65 .65 .65 .65 .65 .65 .65	.70 .68 .35 .14 .09 .10 .10 .06	.70 .72 .58 .43 .23 .01 .07 .08 .10	.66 .74 .65 .49 .30 .05 .05 .05 .10	.64 .80 .72 .57 .39 .20 .02 .08 .08	.78 .80 .76 .63 .46 .20 .06 .01 .06 06

TABLE XIII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.80; R = 1,000,000; PROPELLERS REMOVED - Concluded (b)  $\alpha_{\rm u}$  = 10°, 12°, 14°, 16°, 18°, 20° - Concluded

	Per-			Upper	surface						Lower	surface		
Spanwise	cent			Angle o	f attack						Angle o	f attack		
stations	ohord	10°	150	140	16°	18°	20°	Ц	100	150	140	16°	18℃	20°
0.56 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	0.34 -1.00 -1.20 -1.23 -1.24 -1.31 -1.24 -1.16 62 49 43 36 30 17	0.25 -1.09 -1.31 -1.35 -1.33 -1.26 -1.05 48 48 42 34 24	0.15 -1.20 -1.45 -1.47 -1.42 -1.37 -1.07 69 55 47 41 34	0.09 -1.30 -1.51 -1.48 -1.50 -1.46 -1.16 65 54 50 41 39	-0.06 -1.46 -1.61 -1.55 -1.55 -1.56 -1.51 -1.30 -1.6363565044	-0.20 -1.52 -1.57 -1.54 -1.53 -1.50 -1.35 -1.20 -1.04 79 66 58 49		0.59 .39 .22 .15 .15 .05 .05 .00 .02 .01 .02	0.65 .47 	0.69 .54 .36 .27 .24 .16 .12 .08	0.72 .60 .43 .34 .28 .21 .15 .11	0.75 .69 51 .43 .37 .29 .21 .15 05 .06	0.75 .73 .56 .47 .42 .24 .19 .06 .05
o.68 ъ/2	0 1.5 1.0 7.0 10.0 20.0 30.0 50.0 60.0 70.0 80.0 90.0 95.0	.30 -1.05 96 92 95 85 75 69 61 55 46 29 26	.20 96 -1.01 86 86 84 77 73 66 60 51 46	.07 87 93 83 81 76 75 70 67 57	06 993 889 887 87 82 69 69 69	21 94 97 93 95 99 86 876 74 62 45	- 35 - 99 -1.00 - 97 - 99 - 97 - 96 - 87 - 79 - 77 - 69 - 36 - 36 - 36 - 36 - 36 - 36 - 36 - 36		.577 .40 .24 .15 .12 .07 .05 .04 .04	.60 .48 .30 .21 .18 .10 .09 .05 .04 .05	.59 .52 .35 .26 .19 .14 .09 .05 .02	.59 .54 .29 .24 .16 .11  .05 .01 12	.57 .57 .57 .35 .29 .19 .15 .07 .03 .01 15	.99 .88 .40 .54 .25 .18 .09 .03 -15 -28
o.84 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0 95.0	.17 -1.18 -1.23 -1.16 -1.11 -1.12 -1.02 86 79 70 62 52 52 33 25	.04 -1.17 -1.17 -1.09 -1.09 88 83 72 66 59 52 43	11 -1.13 -1.20 -1.10 -1.11 -1.05 -1.02 90 87 71 66 71 66 53 48	25 -1.11 -1.16 -1.09 -1.11 -1.04 -1.01 89 82 78 71 66 59 53	41 -1.07 -1.11 -1.05 -1.06 -1.01 94 92 86 82 75 68	53 -1.02 -1.05 -1.00 -1.01 99 -1.00 94 95 78 78 78		.56 .39 .24 .15 .13 .08 .05 .07 .07	.59 .59 .30 .20 .18 .11 .07 .06 .06	.59 .50 .34 .24 .20 .14 .07 .05 .04 .01 .06	.79 .54 .37 .29 .23 .16 .08 .05 .01	.50 .50 .57 .33 .38 .19 .09 .06 .04 .01	.55 .58 .36 .30 .22 .11 .06 .09 .04 13
0.94 7/2	0 1.5 4.0 7.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	.29 -1.23 -1.11 -1.05 -1.06 -1.00 80 67 56 49 29 29 20	.19 -1.10 -1.09 -1.05 94 91 79 73 65 59 51 35	.05 -1.02 -1.09 98 -1.01 93 79 74 65 59 54 42	10 99 -1.09 -1.00 94 91 81 76 71 69 64 50	25 93 97 88 93 87 81 75 75 69 69	- 25 - 66 - 66 - 67 - 68 - 69 - 61 - 59 - 59 - 59 - 59 - 59		.51 .28 .19 .11 .08 .03 .01 .0 .02 .02	.56 .34 .25 .16 .04 .01 .01 .01	.57 .38 .29 .20 .14 .08 .04 .01 -03 -05 -111	.58 	.577 45 .37 .29 .21 .13 .07 .0e 06 10	.77 .45 .38 .29 .22 .13 .05 .01





TABLE XIV.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING M = 0.90; R = 1,000,000; PROPELLERS REMOVED (a)  $\alpha_u$  = -2°, 0°, 2°, 4°, 6°, 8°

Spanwise	Per-				surface						surface		
Stations	cent	-20	00	Angle	f attack	6º	1 80	-20	- O	angle o	f attack	60	80
0.10 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 50.0 60.0 70.0 80.0 90.0 95.0	0.53 .83 .20 .06 0 08 1k 22 31 31 31	0.63 .09 .09 .09 .24 .20 .24 .39 .47 .47	- 25 - 30 - 39 - 39 - 39 - 39 - 39 - 39 - 39 - 39	0.73 - 32 - 35 - 38 - 45 - 50 - 45 - 50 - 45 - 50 - 50 - 50 - 50 - 50 - 50 - 50 - 5	0.73 18 51 54 59 59 59 61 79 24	0.69 56 71 68 67 66 77 66 77 66	-0.19 -39 -37 -35 -36 -39 -22 -14	0.01 22 26 26 27 33 34 15	0.21 02 15 15 25 29 35 25 29	0.38 .14 .03 .07 .11 .16 .24 .34	0.51 .29 .14 .07 .04 .09 .17 .09	0.64 .43 .18 .14 .07 .01 .04 05 01
0.19 1/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	.65 .44 .15 03 15 34 41 40 38 37 25 25	.73 .28 01 17 30 49 .05 51 51 51 51 33 16 10	.76 .09 -21 -34 -45 -62 -70 -61 -61 -61 -10	-73 15 16 61 79 83 71 68 68 71 33 31 31 31	.67 .40 .65 .71 .75 .75 .75 .75 .75 .75 .75 .75	-55 -62 -88 -92 -95 -1.08 -1.12 -92 -81 -81 -81 -38 -38	17 34 50 48 43 46 51 46	.06 14 28 44 54 55 50 51 44 17 11	.29 .09 0 30 55 49 50 27 27	.46 .25 .06 .16 .51 .68 .48	.61 .41 .20 .02 -37 .65 13 02 0	.70 .70 .77 .33 .11 .24 .42 .07 .01
0.31 b/2	0 1.5 1.0 10.0 15.0 20.0 30.0 50.0 60.0 70.0 80.0 95.0	384484845 5488 5488 54885 54885 54885 54885 54885 54885 54885 54885 54885 5488	.45 .16 13 25 33 45 50 57 57 57 57 38 38	.52 .03 .03 .03 .03 .03 .03 .03 .03 .03 .03	.58 14 57 63 73 84 85 85 89 59	.60 31 62 76 86 89 99 99 79 79 79 45	-55 -51 -79 -89 -91 -1.00 -1.02 -97 -1.00 -88 68 68	- 39 - 61 - 73 - 67 - 51 - 46 - 46	24 50 67 65 39 38 36 48	02 26 41 37 28 26 41 13 01	.18 05 18 17 20 34 16 06	.47 .15 01 05 05 07 11 14 25	.32 .33 .07 .05 .01 05 06
0.3T5 b/2	0 1.50 7.0 10.0 15.0 20.0 30.0 50.0 60.0 70.0 80.0 90.0	36 17 10 10 10 10 10 10 10 10 10 10 10 10 10	.88 .23 .01 .20 .34 .55 .67 .65 .65 .65 .65	.80 .33 .89 .88 .86 .75 .75 .75	.62 -21 -40 -56 -75 -82 -81 -75 -39 -49	.60 47 56 74 89 94 76 66 55 47 43	- 52 - 72 - 81 - 997 - 93 - 91 - 80 - 73 - 66 - 66	53 77 84 76 74 57 15 15	88 8858 188 188 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	.01 24 33 33 34 36 38 36 31	.26 .02 .18 .20 .25 .30 .30 .30 .30	.44 .20 .04 .08 .14 .20 .36	.16 .07 .06 12 31 36
0.44 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0 95.0	**************************************	88 00 00 00 00 00 00 00 00 00 00 00 00 0	.70 01 24 51 79 83 865 53 38 37 17	.70 .29 .46 .63 .73 .82 .82 .73 .61 .54 .45	-63 -56 -67 -81 -75 -76 -66 -66 -66 -69 -46	.50 -71 -83 -76 -78 -70 -66 -67 -66 -66 -66	- 33 - 61 - 60 - 66 - 47 - 37 - 40 - 44 - 39 - 36	-19 -19 -53 -53 -54 -36 -43 -43 -35 -27	.22 .05 .31 .50 .43 .39 .40 .43 .39	.16 .02 16 11 66 50 36 19	.17 0 25 59 67 46 11 01	.66 .48 .30 .13 .19 .69 .30 .07 .07





TABLE XIV.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.90; R = 1,000,000; PROPELLERS REMOVED - Continued (a)  $\alpha_{\rm u}$  = -2°, 0°, 2°, 4°, 6°, 8° - Concluded

	Per-			Upper	surface					Lover	surface		
Spanwise	cent				fattack						of attack		
	спога	-20	00	20	Ϋ́O	Ф	80	-2°	go	20	140	60	80
0.56 b/2	0 1.50 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.26 .251 .254 .355 .355 .355 .355 .355 .355 .355 .3	0.35 .10 .15 .30 .43 .5% .684 .54 .20 .17 .05	\$ 54,33,86,646,81,115,8	0.53 1.11 1.56 1.86 1.86 1.82 1.82 1.82 1.82 1.82 1.82 1.82 1.82	0.45 39 60 73 80 95 -1.00 96 93 54 30 18 11	0.51 51 69 77 85 98 -1.01 -1.02 -1.02 -1.94 55 41 27 16	-0.55 74 89 84 66 57 53 36 07 05 .01	-0.40 64 81 75 67 56 50 46	-0.09 -37 -44 -36 -33 -29 -26 -12 -01	0.09 16 27 30 26 24 23 20 16 08 01	0.18 06 20 24 21 22 23 22 15 14	0.12 .19 .01 .02 06 07 09 06 08
o.68 b/2	0 1.50 7.00 15.00 30.00 50.00 70.00 80.00 95.00	.10 .457 .17 .02 09 17 24 30 29 216 03	.25 .32 .01 16 26 33 40 45 41 35 30 18 12	.51 .15 .236 .476 .64 .78 .237 .104 .237 .104	56 - 56 - 56 - 56 - 57 - 57 - 58 - 58 - 58 - 58 - 58 - 58 - 58 - 58	.49 29 61 75 74 75 61 50 31 26 20	.54 -50 -50 -50 -50 -50 -50 -50 -50 -50 -50	79 94 97 98 89 89 64 20 .03 .11 .14	57 79 87 80 76 68 14 02 .03 .10	24 47 49 41 33 18 02 .03 .10 .12	.10 13 22 26 23 19 12 04 09 08	.26 .05 09 14 13 14 11 05 01 06	.41 .20 .04 .03 .06 .09 .06 .09 .06 .09
ი.მი ა/2	0 1.5 4.0 10.0 15.0 20.0 30.0 40.0 60.0 70.0 80.0 90.0	.32 .50 .29 .15 .05 05 12 18 20 21 19 14 13	.47 .38 .14 02 12 23 29 39 29 29 20 20 05	.61 .16 09 25 35 45 43 40 33 33 33 33	63 1 35 9 1 66 7 65 65 8 1 1 66 4 68	.58 -37 -57 -70 -71 -86 -85 -89 -79 -71 -50 -36 -31 -10	.49 61 70 94 -1.00 96 92 89 74 60 53 43	69 60 59 57 52 16 36 29 21 11 10	72 79 58 58 27 10 03 .02 .07	28 44 43 38 32 25 01 .01 .06 .13	11 11 19 20 16 11 04 01 .10 .10	.28 .06 .05 .10 .08 .08 .01 .07 .09	.41 .20 .04 01 02 05 01 .01 .04 .05
0.94 5/2	0 1.5 4.0 10.0 15.0 20.0 30.0 50.0 50.0 70.0 90.0	.20 .51 .35 .21 .10 .01 05 16 20 26 21 19 16 15	.28 .19 .24 .09 02 11 18 25 26 27 15 17 17	\$0.23 \$2.25 \$2.25 \$3.30 \$3.00	.63 .06 .27 .42 .55 .60 .51 .47 .18 .04 0	.60 31 49 62 75 67 65 46 31 20 01	.55 59 69 79 81 75 61 36 36 33		88 78 80 70 65 32 18 10	48 45 40 35 26 09 03 08 .13 .16 .18	0 15 19 20 16 12 09 06	.24 .02 .05 01 08 04 04 04	.37 .13 .04 01 04 06 07 06 01 01

Commence

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TABLE XIV.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.90; R = 1,000,000; PROPELLERS REMOVED - Continued (b)  $\alpha_{\rm u}$  = 10.00

	Per-		 Upper	surface	 			Lover	surface	 
Spanwise stations	cent		Angle	of attack				Angle	of attack	
0.10 b/2	0 1.5 4.0 7.0 10.0 20.0 30.0 50.0 60.0 70.0 80.0 95.0	10 0.6166.198.888888888888888888888888888888				0.73 .72 .39 .27 .22 .14 .09 .04 .01 .03 07				
0-19 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 95.0	-39 84 -1.11 -1.16 -1.17 -1.27 -1.27 -1.11 97 66 41 30				.74 .64 .24 .08 .01 .05 .03 .01	•			
0.31 6/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 60.0 70.0 90.0	.49 67 96 -1.01 98 98 98 95 53 77 76 67				.62 .43 .25 .17 .14 .08 .02 03				
0.375 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 50.0 50.0 50.0 70.0 90.0 90.0	.39 59 99 91 91 92 71 74 68 67 64				.63 .45 .27 .18 .11 .04 05 24 26				
0.84 b/2	0 1.5 8.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 90.0	0.36 99 57 76 75 78 69 66 69				.72 .79 .25 .01 37 70 14 11				

CONTRACTOR

TABLE XIV.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.90; R = 1,000,000; PROPELLERS REMOVED - Concluded (b)  $\alpha_u$  = 10° - Concluded

	Per-		Upper	surface		T	 Lower	aurface	
Spanwise stations	cent		Angle o	f attack			Angle	f attack	
stations	chord	100				10°			
0.56 b/2	0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.47 65 92 97 -1.08 -1.09 -1.06 -1.05 -1.05 -1.05 -1.02 65 49				0.52 .30 .06 .04 01 09 08			
o.68 b/2	0 1.5 7.0 10.0 15.0 20.0 30.0 \$0.0 50.0 70.0 90.0	- 83 - 83 - 83 - 83 - 81 - 75 - 68 - 66 - 55 - 55 - 145 - 145				.14 .28 .21 .03 .03 .06 .06 .06 .07 .09 .16 .25			
o.8o b/2	0 1.5 1.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 90.0 95.0	.37 -79 96 -1.04 -1.07 -1.01 -1.01 -1.00 94 81 69 57 54 42				.44 .28 .10 .04 .01 .03 .03 .03 .01 .03 .03 .01			
0.94 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	- 85 - 87 - 81 - 81 - 84 - 79 - 72 - 66 - 61 - 56 - 89 - 37 - 37				. h3 19 . 10 . o4 0 06 07 10 08 06 12 17			



TABLE XV.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.165; R = 8,000,000; PROPELLERS REMOVED (a)  $\alpha_{\rm U} = -2^{\rm o}$ ,  $0^{\rm o}$ ,  $2^{\rm o}$ ,  $4^{\rm o}$ ,  $6^{\rm o}$ ,  $8^{\rm o}$ 

Spanwise	Per-			Upper	surface f attack						surface		
stations	cent	-&°	o <sup>a</sup>	So sufficient	4º	60	8°	_e°	00	So william	f attack	60	8 <sup>e</sup>
0.10 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 90.0	**************************************	0.1982888899508	**************************************	50111111111110025	0.43 	0 18888448854488885 041111111111	-0.63 -1.54 -1.39 -1.66 -1.39 -1.66	188 85 H 8	063 1989 11111 108 11111 108 108 108 108 108 108	689119858 88	0.48 .27 .06 .04 0	0 -
0.19 b/2	0 1.5 7.0 15.0 15.0 20.0 20.0 50.0 60.0 90.0	PSFEENS CHERES	<b>47.80万円 10.10 1</b>	9111111111111 9588886	51866668 - 94 55 56 95 6	-17 -1.12 -1.02 -1.88 -7.51 -1.59 -1.59 -1.29 -1.00 -1	14444   111111   14444   1688   1888	- 91 - 88 - 78 - 73 - 73 - 73 - 73 - 73 - 73 - 73 - 73	ନ୍ଧ ଅନ୍ୟ ହୋଷ୍ଟ ସ	.08 -12 -26 -35 -13 -13 -13 -13 -13 -13 -13 -13 -13 -13	ୟୁ ମୁଖ୍ୟ ଅବସ୍ଥାନ । ଅଧିକ ଅବସ୍ଥାନ । ଅଧିକ ଅବସ୍ଥାନ । ଅଧିକ ଅଧିକ ଅଧିକ ଅଧିକ ଅଧିକ ଅଧିକ ଅଧିକ ଅଧିକ	.19 .09 .09 09 09	.62 .55 .36 .31 .0 .0 .03 .05 .03 .06
0.31 ъ/2	0 1.5 1.0 10.0 15.0 20.0 20.0 40.0 50.0 60.0 80.0 95.0	01.36 .11 0 8 15 18 0 15 18 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	.33 .18 .08 .18 .23 .29 .29 .30 .27 .24 .21 .21 .06	491339433398399866 11339433983399866	.50 -46 -60 -59 -55 -45 -33 -33 -29 -20 0	. 391 - 991 - 881 - 769 - 531 - 731 - 208 - 001	- 143 H 82 82 82 82 83 84 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	88 84 69 61 53 44 37 31 20	- 45 - 43 - 43 - 33 - 24 - 16 - 04 - 08	02 21 26 27 25 21 21 18 11	707 707 707 707 707 707	.47 .28 .10 .04 .01 .03 03 03 02	80.45 1.85.17.19.8.55.04 1.85.17.19.8.55.04 1.86.10.10.10.10.10.10.10.10.10.10.10.10.10.
0.375 b/2	0 1.5 4.0 7.0 19.0 20.0 30.0 40.0 60.0 70.0 80.0 95.0	1.42.86 0.31.15 1.29.17.1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.10 1.	.26 .25 .02 14 20 26 29 27 24 20 16 04	238824 118824 11111 11111 11111 11111	.51 56 60 68 58 58 39 39 39 39 39 39	.23 -1.12 94 92 88 72 36 29 36 20 06	1.30 1.33 1.34 1.55 1.57 1.57 1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.50	-1.06 -52 -70 -60 -54 -33 -38 -10	- 49 - 53 - 45 - 38 - 33 - 35 - 14 - 08 - 08	-03 -19 -23 -25 -23 -21 -17 -09 -04	30 50 7 7 99 7 1 99 7 1 9 9 1 9 1 9 9 1 9 9 9 9	.50 .30 .06 .02 01 01 01 .03 05	.57 .46 
0.44 5/2	0 1.5 4.0 7.0 15.0 20.0 30.0 50.0 60.0 70.0 90.0 95.0	148884444444444444444444444444444444444	.35 .20 018 23 30 32 34 30 27 24 24 04	5793365505227338837503	-51 -66 -766 -686 -53 -33 -33 -39 -39 -39 -39 -39 -39 -39 -3	.10 -1.33 -1.04 55 52 52 52 52 50 52	444441111110 888888888888888888888888888	-1.25 -1.08 -1.88 -1.77 -1.22 -1.04 -1.05 -1.05 -1.06	~53 ~61 ~54 ~56 ~56 ~56 ~17 ~09 ~03 .03	.05 19 32 37 30 20 12 05 0	.49 .15 0 -11 -19 -13 -07 -08 .00	.59 .41 .09 01 07 02 0	.6d .56

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1172

TABLE XV.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.165; R = 8,000,000; PROPELLERS REMOVED - Continued (a)  $\alpha_u$  = -2°, 0°, 2°, 4°, 6°, 8° - Concluded

	Par-			Upper	surface					Lover	surface		
Spanvise stations	cent				f attack						of attack		
SCA CTOLLS	chord	-2°	00	20	40	6°	go.	~€o	00	20	10	60	80
0.56 b/2	0 1.5 4.0 70.0 15.0 20.0 30.0 50.0 50.0 80.0 90.0	-0.22 .37 .16 .04 04 10 12 17 16 14 13 03 .04	0.22 02 19 23 24 25 23 21 23 24 25 23 25 23 24 25 23 23 24 25	0.45 08 36 36 34 34 34 34 29 21 05	0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.27 94 91 88 83 73 56 56 20 20 06	17.59.21.20.38.75.45.48.88.88.88.88.88.88.88.88.88.88.88.88.	1.07 90 62 52 33 7 7 7 7 7 7 7 7 7 7	-0.54 -57 -50 -44 -38 -39 -20 -20 -01 -04	-0.11 26 27 24 20 17 1* 08 02 01	0.23 0 1.39 1.39 1.09 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03	0.67 .25 .07 .03 .01 01 01	0.59 .42 .23 .16 .13 .09 .07 .05 .07
0.68 b/2	0 1.5 7.0 10.0 15.0 20.0 20.0 40.0 50.0 70.0 95.0	6.5% 1.00 1.11 1.11 1.10 1.00 1.11 1.11 1.1	######################################	1.25 1.32 1.33 1.33 1.33 1.33 1.33 1.33 1.33	**************************************	98548554958885	54448858654885486 64444666664885486	1.45 6984 334 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.1	1.67 1.48 1.08 1.00 1.00 1.00 1.00 1.00 1.00 1.0	ଅଷ୍ଟ   ଅଷ୍ଟ୍ରମ୍ବ   ଅନ୍ତର	୍ଟ୍ର   ଚଞ୍ଚର୍ଷ ଅଧିକ   ଅନ୍ତ ଚଞ୍ଚର   ଜ୍ୟାନ୍ତ   ଜ୍ୟାନ୍ତ ଜ୍ୟ	কুদ্   নজ্জ্বর   চচ্চ্ত্ত্ত	.54 .42 .26 .18 .15 .11 .10 .11 .11 .11
0.80 ъ/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	\$ 288 FF   10 F   20 F	855477 (99748568)	53 .68 .11 .786 .86 .786 .786 .786 .786 .786 .786	3848888 8555588	1 668 1 37 38 4 1 3 3 6 4 1 3 3 6 4	1.32 -1.49 -1.15 -1.03 -1.81 -1.51 -1.51 -1.26 -1.03 -1.03 -1.03	1555 8554 8 148538888	188 178881118 388	ស្រង្គ នេះ	नुष्ठ  ६५६६   त्ष्रइइन	14.47   128.50   5.85.588.3	.555 .42 .34 .17 .15 .111  .09 .10 .10 .10
0.9A b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	-1.00 .51 .37 .23 .14 .07 .07 .07 06 19 09 09	55 % 55 % 56 % 56 % 56 % 56 % 56 % 56 %	-36 -19 0 -11 -15 -17 -15 -19 -19 -17 -13 -01	54 1188334 111111111111111111111111111111	- 48 - 59 - 62 - 63 - 51 - 51 - 40 - 34 - 39 - 24 - 19 - 05	10000000000000000000000000000000000000	1.99 1.685.389 1.1.1.1.1.0.05.8	-1.10 -57 -49 -39 -30 -21 -14 -07	1.30 1.30 1.30 1.30 1.30 1.30 1.30 1.30	0 108	.33 -33 .03 .03 .02 0 .02 -05 .05	.51 .25 .19 .12 .10 .06 .05 .06



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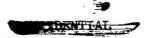


TABLE XV.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.165; R = 8,000,000; PROPELLERS REMOVED - Continued (b)  $\alpha_u$  = 10°, 12°, 14°, 16°, 18°, 20°

	Per-			Upper	surfaçe						Lower	surface		
Spanwise stations	cent			Angle o	f attack			1			Angle o	f attack		
POLUTUMB	chord	10°	120	140	16°	18°	20°	Ш	100	120	140	16°	180	200
0.10 ъ/2	0 1.5 4.0 7.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	9.558 4.10398897769224	9.8873264T6503444895	1-2-068 1-2-068 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	4.25 4.35 4.1.63 4.1.75 7.75 4.34 7.75 7.75 7.75 7.75 7.75 7.75	4.88 4.10 4.12 4.12 4.12 4.14 4.14 4.14 4.14 4.14	719784774411111 719784774411111		6.50 3.80 4.4.4.4.9.4   6.80	66.44888311155 6.888311155 6.888311155	0.59 .70 .56 .46 .40 .32 .27 .23 .20 .20	0.50 .74 .53 .47 .37 .38 .28 .25 .23	0.40 .75 .68 .58 .52 .41 .36 .34	0.27 .76 .74 .63 .57 .46 .40 .39 .26
0.19 6/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 90.0 95.0	1.152 1.152 1.154	-2.30 -3.26 -3.27 -1.59	35551883 88554337554 44-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1		4.43 2.79 4.66 4.66 4.00 1.70 1.70 1.70 1.70 1.70 1.70 1.70 1	38755588 4488658888 3777777 1717 1717 1717 1717 1717 1717 1		554 63 54 63 88 88 88 95 76 88 96 96 96 96 96 96 96 96 96 96 96 96 96	.866 .888 .899 .13 .099 .11	.05 dd .70 .59 .46 .20 .13 .14 .05 .0	3. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	-25 -58 -79 -70 -57 -57 -27 -17 -17 -04	29 .57 .81 .74 .62 .42 .31 .19 .16
c.31 b/2	0 1.5 4.0 7.0 15.0 20.0 20.0 40.0 50.0 60.0 90.0 99.0	65555555555555555555555555555555555555	19-9-1-1-33-1-88-7-88-8-7-85-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-	4.53 4.55 4.15 4.15 4.15 4.15 4.15 6.88 8.88 8.88 8.88 8.88 8.88 8.88 8.8	7-1-7-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	-1.97 -4.66 -3.21 -2.53 -2.10 -1.70 -1.98 -7.70 -7.80 -7.44 -7.35 -7.24	17.14 17.14 17.14 17.17		.61 .57 .37 .29 .218 .12 .19	.56 .65 .49 .40 .34 .27 .21 .16 .11	14.5   8.5.4 B.8.0   17   19.9	19 19 19 19 19 19 19 19 19 19 19 19 19 1	12 . T. C.	05 .68 .76 .69 .61 .51 .41 .34 21
0.375 b/2	0 1.5 1.0 7.0 15.0 20.0 30.0 40.0 60.0 7.0 80.0 90.0	18888220 8473888 191111	प्रकृतिक । १९५५ म् १९५५ म् १९५५ म् १९५५ म्	ान्ध्रक्ष १९०० मा । । । । । । । । । । । । । । । । । ।	2523458   8882848 1574444   11111	55-55-55-55-55-55-55-55-55-55-55-55-55-	-6.03 -5.09 -2.96 -2.96 -2.96 -1.52 -1.52 -1.23 -1.94 76 76 39		.53 .55 .40 .25 .17 .15 .11 .11 .09 .08	200 200 200 200 200 200 200 200 200 200	958 559,4350 129 149 149	156 855983 217 868	.34 .53 .66 .59 .53 .42 .34 .21 .21 .21	-53 .50 .68 .63 .57 .37 .23 .17
0.44 b/2	0 1.5 1.0 7.0 7.0 15.0 35.0 80.0 80.0 80.0	1990792158653242800 19977771111111111	#86658##88F5##8885	\$\$\$\$\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	194444444468885438	7.75 7.45 7.45 7.45 7.40 7.40 7.40 7.40 7.40 7.40 7.40 7.40	-3.63 -1.49 -1.41 -1.33 -1.27 -1.10 -1.10 -1.10 -1.79 -1.79 -1.79 -1.33		48 54 85 98 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 8 8 9 9 8 9 9 8 9 9 8 9 9 8 9 9 8 9 9 8 9 9 8 9 9 8 9 9 8 9 9 8 9 9 8 9 9 8 9 9 8 9 9 8 9 9 8 9 9 8 9 9 8 9 9 8 9 9 9 8 9 9 8 9 9 8 9 9 8 9 9 8 9 9 9 8 9	.08 .64 .53 .42 .25 .14 .14 .12 .14	**   E84 Bash Bi	अरु   एक्फ्रम्यम्म   क्ष	28 59 76 88 57 7 7 7 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- 41 - 56 - 78 - 71 - 61 - 41 - 27 - 20 - 14 - 19 08 15

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TABLE XV.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.165; R = 8,000,000; PROPELLERS REMOVED - Concluded (b)  $\alpha_{\rm u}$  = 10°, 12°, 14°, 16°, 18°, 20° - Concluded

	Per-			Upper	aurface			_			Lover	surface		
Spanwise	cent				f attack						Angle	of attack		
stations	chord	100	150	140	16°	180	20°		100	120	140	16°	18°	200
0.56 b/2	0 1.5 7-0 15.0 15.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 2	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	######################################	97488554555386958	385588558856388548	938,488,8638,768,488,48 1,444,44,44,11,11,11,11,11,11,11,11,11,1	1.8514.8883914888914 1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1		0.61 .55 .57 .88 .18 .19 .19 .19 .19 .19	0.55 & 19.30 & 86 & 19   1.14 1.10 & 9	0.39 .68 .59 .50 .43 .35 .24 .16 .11	0.27 .69 .54 .47 .38 .27 .48 .49 .49 .49	0.14 .66 .58 .52 .43 .36 .30	-0.05 .66 .70 .63 .57 .47 .40 .34 .34 .11
0.68 ъ/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 90.0	-69 -2.26 -1.79 -1.49 -1.32 -1.32 -1.51 51 38 27 0	-2.03 -3.10 -2.35 -1.65 -1.99 -1.99 -1.56 -1.19 -1.56 -1.56 -1.56 -1.56 -1.56 -1.56	-3.45 -3.97 -2.90 -1.96 -1.05 -1.05 -1.05 -1.05 -1.05 -1.05 -1.05 -1.05 -1.05 -1.05 -1.05 -1.05	4.59 4.63 7.54 7.44 7.75 7.44 7.76 8.88 8.81 1.65 1.65	5.83 -5.89 -1.79 -1.179 -5.54 -1.10 -1.13	7-5-5-8-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-		.53 .53 .37 .28 .25 .19 .16 .15 .11	\$5.55.58.88.4.5.55.55.55.55.55.55.55.55.55.55.55.55	.08 .57 .52 .44 .39 .31 .27 .21 .18 .19 .08	.20 .53 .56 .49 .43 .35 .30 .23 .20 .11 .06	.50 .46 .57 .52 .46 .40 .33 .25 .21 .17 .10	67 .37 .59 .51 .43 .36 
0.80 b/2	0 1.5 k.0 7.0 10.0 15.0 20.0 30.0 k0.0 50.0 60.0 70.0 80.0 90.0	-1.24 -2.27 -1.62 -1.39 -1.03 89 189 188 27 16 02	-2.45 -3.05 -2.15 -1.56 -1.28 -1.09 53 59 15 29 15 29	-3.92 -3.87 -2.67 -2.14 -4.83 -4.47 -4.22 -73 -58 -28 -1.04 -03	-5.27 -4.60 -3.09 -2.43 -2.05 -1.63 -1.34 -76 59 42 26 13 08 06	-6.72 -5.35 -3.50 -2.25 -1.44 58 40 26 18 13 12	\$3568865   1988 P.S.3 5 17777777   7   1   1   1   1		.56 .58 .36 .27 .24 .18 -14 .13 .12 .11	. 12 .55 - 14 .36 .31 .25 - 17 .16 .15 .11 .10	.19 .57 -50 .43 .37 .30 -21 .19 .17 .14 .10	09 .53 48 .43 .35 .25 .22 .19 .11	-\$1 .\$6 .51 .\$6 .39 .27 .24 .20 .16 .10	19 .54 .60 .54 .48 .39 27 .23 .18 .12 .04
0.94 11/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 99.0	61 -1.62 -1.34 -2.43 -1.00 84 67 46 39 39 30 22 12 0	-1.61 -2.28 -1.81 -1.53 -1.04 85 33 33 32 23 01	-2.88 -3.02 -2.27 -1.83 -1.51 -1.21 -97 -345 34 23 11 01		-5.61 -4.36 -3.09 -2.41 -1.93 -1.50 -1.21 65 48 33 20 12 09 06	5,94,658 4,94,658 1,9		.56  .37 .28 .21 .17 .12 .09  .09  .07	.52 -45 .38 .30 .25 .17 .12 -09 .08	.33 .51 .42 .37 .30 .21 .14 .09	.11 	-18 -57 -54 -46 -40 -30 -22 -17 -10 -06 -03 01	

Office Total Control



TABLE XVI.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.80; R = 2,000,000; PROPELLERS REMOVED (a)  $\alpha_{\rm u}$  = -2°, 0°, 2°, 4°, 6°, 8°

	Per-			Upper	r surface					Lower	surface		
Spanwise stations	cent			Angle	of attack						f attack		
0.10 5/2	chord  0 1.5 4.0 7.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0	-2° 0.42 .39 .16 .35 17 25 26 26 26 26	00 0.55 .24 .01 .12 .19 -25 .30 -31 -35 -31 -29	20 0.64 .06 16 29 34 39 45 45 35 35 35 35 35	0.67 - 16 - 36 - 36 - 50 - 56 - 56 - 57 - 37 - 37 - 37 - 38 - 37	6° 0.65 41 60 70 69 68 61 39 30	6° 0.5870829986848678767626	-2° -0.35 -53 -53 -43 -43 -43 -27 -27	6 9 13 1 1 13 1 13 1 13 1 13 1 13 1 13 1	0.14 09 20 21 26 26 26 29 26	0.34 .10 03 06 09 13 15 11 04	0.50 .38 .38 .06 .03 .02 .05 .05	0.63 .12 .17 .17 .06 .04 .03
0.19 ъ/2	95.0 0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	- 04 - 11 - 08 - 21 - 38 - 38 - 31 - 24 - 14 - 09	- 65 - 22 - 39 - 52 - 45 - 41 - 33 - 29 - 10 - 02	-04 -04 -33 -49 -60 -78 -37 -37 -37 -32 -07	- 54 - 37 - 63 - 73 - 82 1.00 - 45 - 55 - 43 - 34 - 22 - 05 - 02	04 53 73 97 99 -1.04 -1.23 99 57 63 48 36 23 09	06 37 -1.02 -1.33 -1.33 -1.45 -1.45 76 45 45 45 45 45	- 08 - 57 - 57 - 55 - 49 - 57 - 49 - 57 - 49 - 57 - 59 - 59 - 59 - 59 - 59 - 59 - 59 - 59	98 - 28 - 35 - 59 - 51 - 59 - 51 - 59 - 31 - 31 - 31 - 31 - 32 - 33 - 34 - 35 - 35 - 35 - 35 - 35 - 35 - 35 - 35	20 20 20 21 22 24 24 25 26 26 27 27 28 28 28 28 28 28 28 28 28 28 28 28 28	.05	.01 .04 .59 .40 .17 05 20 09 01	.03 .01 .59 .57 .14 .13 .11 .05
0.31 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 20.0 50.0 50.0 70.0 80.0 90.0	\$395 	14 - 16 - 26 - 34 - 45 - 45 - 39 - 30 4 - 69 - 61	**************************************	89000000000000000000000000000000000000	-04 -04 -1.05 -1.05 -1.16 -1.11 -99 -34 -35 -07	87 -1.18 -1.36 -1.36 -1.37 -1.90 -1.97 -1.97 -1.97	- 58 - 81 - 90 - 78 - 57 - 38 - 24 - 10 - 01	31 54 56 50 57 37 31 25	0 23 -30 -31 -32 -32 -32 -32 -32 -32 -32 -32 -32 -32	.11 .15 .15 .15 .15 .15 .15 .15 .15 .15	.04 .01 .01 .01 .04 .06 08 10	.58 .39 .20 .13 .10 .05 .01 02
0.375 ъ/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 90.0 95.0	.23 .39 .16 .02 .23 .30 .37 .37 .39 .37	- 45 - 22 - 03 - 21 - 30 - 45 - 36 - 36 - 32 - 08 - 01	59 - 68 - 30 - 56 - 65 - 65 - 61 - 53 - 33 - 33 - 31 - 31 - 30 - 66	59 - 47 - 61 - 88 - 85 - 96 - 36 - 36 - 36 - 36 - 36 - 36 - 36 - 3	-50 -51 -50 -1.95 -1.26 -1.26 -1.26 -1.26 -1.36	-35 -1.15 -1.27 -1.39 -1.29 -1.25 -1.22 84 71 63 56 50	80 -1.06 98 75 61 55 32 21 17	38 60 59 55 57 45 35 20 15	.01 -23 -34 -35 -35 -35 -35 -36 -06	.30 .06 .09 .15 .18 .21 .22 .15 .01	.49 .27 .01 .03 08 11 05 01	.29 .41 .22 .13 .06 .01 .01 .04 .00
0.44 b/2	0 1.5 7.0 10.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 90.0	38 44 5 4 3 4 4 5 4 5 4 5 5 5 5 5 5 5 5 5	25 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	64 14 36 56 88 78 4 78 88 88 1 78 1 78 1 78 1 78 1 78 1 78	64 55 55 55 55 55 55 55 55 55 55 55 55 55	- 59 -1.05 -1.22 -1.22 -1.05 -	.32 -1.18 -1.24 96 86 80 80 77 57 50 39	66 95 80 71 29 37 43 45 45	- 26 - 51 - 50 - 49 - 35 - 43 - 34 - 07	14 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	.44 .17 .19 .45 .08 .01 .04	.60 .40 .93 .82 .93 .93 .93 .95 .95	.68 .54 .35 .17 .06 .21 .11 .05 .01



TABLE XVI.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.80; R = 2,000,000; PROPELLERS REMOVED - Continued (a)  $\alpha_{\rm U}$  = -2°, 0°, 2°, 4°, 6°, 8° - Concluded

	Per-			Upper	surface					Lover	surface		
Spanwise stations	cent			Angle o	f attack					Angle	of attack		
BCECTORE	chord	_2°	oº.	20	40	6°	8°	လူ	00	20	40	60	8°
ი.56 ъ/2	0 1.5 7.0 10.0 15.0 30.0 50.0 50.0 50.0 90.0 95.0	ଶ୍ୟତ୍ତିକ୍ଷଣ୍ଟ ଅନ୍ତର୍ଜ ବର୍ଷ ଅନ୍ତର	0.40 .16 .109 24 33 39 37 37 38 14 05	0.51 0.51 0.51 0.51 0.51 0.51 0.51 0.51	0.55	0.51 -57 -85 -1.00 -1.09 -89 -89 -36 -36 -01	0.45 74 91 97 -1.04 -1.15 -1.09 84 50 41 38 38	-0.68 90 -1.00 91 86 66 49 35 06 .01	-0.37 69 61 52 33 26 04 03	-0.05 -30 -36 -35 -35 -30 -27 -22 -22 -20 -31	0.24 01 16 15 12 11 08 01	0.40 .16 .04 04 05 06 06	0.50 .28 .31 .05 .04 0 01 04 01 01
0.68 b/2	0 1.5 4.0 7.0 10.0 20.0 30.0 40.0 50.0 70.0 80.0 90.0	- 03 - 50 - 01 - 09 - 16 - 23 - 24 - 26 - 16 - 16 - 16	- 37 - 06 - 09 - 19 - 36 - 34 - 38 - 38 - 38 - 38 - 38 - 38 - 38 - 38	5214 6354 6354 645 645 645 645 645 645 645 645 645 6	.60 23 57 71 80 84 75 32 29 29 22 12	552 -886 -1.00 -1.00 -885 -1.00 -1.0	- 59 - 59 - 59 - 59 - 50 - 50 - 50 - 50 - 50 - 50 - 50 - 50	-1.10 -1.25 -1.11 -1.10 -1.01 98 30 08 01 .06 .10	73 92 79 70 54 31 21 05 .01	20 36 35 31 24 17	-10 -10 -15 -13 -11 -07 0 .03	.40 .20 .05 01 02 03 01 .04 .06	.50 .15 .50 .50 .50 .50 .50 .50 .50 .50 .50 .5
o.80 b/2	0 1.5 4.0 7.0 10.0 20.0 20.0 30.0 50.0 50.0 70.0 80.0 90.0	21 .52 .30 .17 .07 -03 -10 -115 -116 -119 -109	40 15 11 20 25 25 25 27 25 27 25 27	.61 .14 11 (25 33 41 44 37 34 39 21 33	.64 28 50 64 71 75 70 68 56 12 12 03	.52 62 80 90 97 94 89 76 42 30 11 01	.39 87 -1.04 -1.01 -1.12 -1.01 98 80 62 49 16 10	80 74 74 70 64 54 35 27 10 03	89 86 74 69 52 25 10 04 03 08	22 36 35 31 25 18 02 .03 .06 .10	.23 .02 09 10 09 06 06 .04 .04 .13 .13	.42 .22 .06 .01 .02 .01 .07 .09 .10	.52 .30 .15 .09 .07 .08
0.94 b/2	0 10.0 7.0 10.0 20.0 30.0 50.0 60.0 70.0 80.0 90.0	.11 .51 .35 .20 .09 .01 06 15 18 17 14 13	.20 .42 .74 .70 .70 .70 .70 .70 .70 .70 .70 .70 .70	.50 .22 .01 .12 .21 .22 .31 .33 .31 .26 .21 .18 .18	.65 15 34 53 53 55 47 41 37 19 12 05	.59 53 66 79 89 81 75 69 53 21 16 11	.48 84 991 99 991 82 82 82 49 12 04	149   465   44   45   44   45   44   45   44   45	-1.07 89 36 32 26 14 06	50 37 32 21 06 01 08 13 16	.10 06 12 13 11 09 04 02	.36 .04 0 0 01 0 .02 .06 .08 .12	. 47 - 22 . 14 . 66 . 63 . 63 . 63 . 63 . 63 . 63 . 63



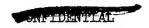


TABLE XVI.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.80; R = 2,000,000; PROPELLERS REMOVED - Continued (b)  $\alpha_{\rm U}$  = 10°, 12°, 14°, 16°, 18°, 20°

	Per-			Upper	nurface	·					Lower	surface		
Sperwise stations	cent				attack							attack		
	ebord 0	0.49	0.39	0.26	0.14	0.01	0.11 20°	-	100	120	110	160	180	300
0.10 b/2	1.5 4.0 7.0 15.0 20.0 30.0 40.0 50.0 60.0	-1.01 -1.05 -1.17 -1.11 -1.09 94 95 57 64 71	-1.19 -1.25 -1.34 -1.27 -1.29 -1.04 99 63 71	-1.37 -1.49 -1.46 -1.40 -1.19 -1.06 92 84 80 51	-1.41 -1.41 -1.32 -1.30 -1.21 -1.18 -1.10 -1.01 93 87	-1.29 -1.27 -1.21 -1.20 -1.17 -1.16 -1.12 -1.07 -1.02 97	-1.44 -1.43 -1.37 -1.37 -1.34 -1.32 -1.26 -1.21 -1.16 -1.09 99		0.73 .54 .35 .28 .23 .15 .11 .09	0.79 .64 .34 .31 .24 .19 .14	0.84 .72 	0.89 .79 .60 .50 .44 .35 .29 .25 .19	0.91 .85 .67 .56 .51 .41 .35 .29	0.94 .91 .73 .62 .57 .46 .40 .33
	90.0 95.0	41 22 10	61 39 33	74 54 47	60 70 61	99 80 73	88 76 68		.02	006	02	03 15	03	.01
0-19 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 90.0 90.0	.18 -1.21 -1.40 -1.27 -1.25 -1.18 -0.4 -1.13 -1.04 74 74 58 44	.01 -1.30 -1.32 -1.07 -1.07 -1.05 -1.06 96 87 61 49	21 -1.25 -1.15 -1.00 -1.00 -1.00 -1.04 -1.05 93 92 74	1.14 -1.05 -99 -99 -99 -99 -99 -99 -99 -99 -99 -9	55 -1.07 -1.06 96 96 96 -1.00 91 66 63	77 -1.19 -1.15 -1.11 -1.11 -1.11 -1.12 -1.13 -1.11 -1.00 93 80		.46 .27 .04 .03 .03 .04	.75 .73 .56 .38 .04 .04 .03 .03	.74 .78 .65 .46 .26 .20 .07	74 -74 -72 -75 -75 -75 -75 -75 -75 -75 -75 -75 -75	.69 .84 .63 .44 .24 .24 .06 .04	.64 .67 .70 .52 .32 .22 .20 .07
0.31 6/2	0 1.5 4.0 7.0 10.0 15.0 20.0 20.0 40.0 50.0 60.0 90.0	. 36 -1.02 -1.34 -1.43 -1.44 -1.37 -1.18 -1.00 81 81 25 20	-29 -1.10 -1.36 -1.37 -1.31 -1.31 -1.01 -1.05 -1	.17 -1.24 -1.25 -1.19 -1.14 -1.14 -1.14 -1.14 -1.16 -70 -66 -79 -70	10 125 11.15 11.15 11.16 11.06	04 -1.19 -1.17 -1.09 -1.04 -1.03 98 91 91 74 65 65	989443444444688		.66 .49 .29 .22 .11 .06 .03	10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5	.75 .65 .36 .30 .24 .14 .10	.80 .72 .53 .45 .39 .30 .21 .14	.83 .78 .60 .53 .45 .39 .26 .19 .04	.81 .83 .69 .60 .52 .42 .35 .25 .25
0-375 b/2	0 1.5 1.0 10.0 15.0 20.0 30.0 50.0 60.0 70.0 60.0 95.0	230 1.32 1.32 1.35 1.35 1.35 1.35 1.35 1.35 1.35 1.35	097 - 88 - 88 - 88 - 88 - 88 - 88 - 88 - 8	- 10 - 81 - 80 - 79 - 79 - 79 - 79 - 70 - 76 - 76 - 76 - 68 - 66 - 66	-23 -380 -78 -76 -77 -77 -77 -77 -76 -76 -76 -76 -76	- 41 - 81 - 31 - 75 - 75 - 75 - 75 - 75 - 75 - 75 - 75	51 74 75 74 73 73 0 72 72 72 72 72 72 72 		.64 .49 .30 .21 .15 .07 .03 04 05	.65 .56 .38 .83 .136 .05 .05 .29	.67 .61 .35 .29 .18 .09 03	.66 .66 .52 .41 .24 .15 .01 05	.6A .69 .57 .47 .40 .29 .20 .04 03	.63 .72 .68 .36 .36 .36 .36 .37
o.44 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	.14 91 88 75 75 70 70 55 55 55 55 55 55 55 5	5774 PF888888888858	- 13 - 74 - 77 - 78 - 69 - 69 - 69 - 69 - 69 - 79 - 79	29 73 73 72 60 69 60 66 52 51	45 70 70 69 69 69 69 69 63 60 56	d 69 69 69 89 80 80 61 61		.6d .42 .75 .41 .68 .65 .65 .66 .74 .78	.70 .67 .51 .35 .14 .09 .10 10 09	.69 .71 .58 .42 .23 .001 06 11 10 29	.67 .75 .64 .49 .31 .06 .03 06 10	.63 .78 .70 .56 .39 .13 .01 .08 08	.59 .50 .63 .46 .20 .06 .01 09



TABLE XVI.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.80; R = 2,000,000; PROPELLERS REMOVED - Concluded (b)  $\alpha_{\rm U}$  = 10°, 12°, 14°, 16°, 18°, 20° - Concluded

	Per-			Upper	surface						Lower	surface		
Spanwise stations	chord				f attack			Į				f attack		
804010015	chord	10°	120	140	16°	18°	20°		10°	15°	140	166	18°	500
0.56 b/2	0 1.5 7.0 10.0 15.0 20.0 30.0 50.0 70.0 80.0 95.0	0.34 -1.04 -1.27 -1.26 -1.36 -1.31 -1.14 61 47 41 36 29	0.26 -1.10 -1.34 -1.36 -1.39 -1.33 -1.06 46 41 33 24 20	0.15 -1.22 -1.50 -1.51 -1.51 -1.42 -1.64 51 40 33 29	0.3.79d.5554.2864.5555.335	0.5666666666666666666666666666666666666	-0.19 -1.64 -1.69 -1.63 -1.63 -1.53 -1.52 -1.21 -1.02 -76 -65		0.59 .39 .31 .31 .57 .64 .82 .93 .93 .93 .93 .93 .93 .93 .93 .93 .93	0.64 .28 .20 .46 .46 .46 .46 .46 .46 .46 .46 .46 .46	0.68 .53 .35 .26 .22 .15 .07	0.72 .79 .34 .38 .22 .15 .11 .03 .01	0.75 .66 .49 .49 .40 .27 .19 .27 .05 .08	0.76 .73 .56 .48 .34 .26 .19
0.68 b/2	0 1.5 1.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	29 -1.09 -1.	.19 99 91 85 74 66 51 34 32	.06 99 84 83 83 76 76 56 37	07 -1.09 87 87 85 64 64 54 54	1588888884F8884F	-38 -1.00 -96 -96 -96 -96 -98 -80 -80 -64 -62		.24 .15 .11 .07 .08 .06 .06	59 -45 -29 -146 -20 -26 -25 -46 -25 -46 -25 -46 -25 -46 -25 -25 -25 -25 -25 -25 -25 -25 -25 -25		.59 .59 .89 .44 .11 .88 .89 .44 .11 .88 .89 .44 .11 .88 .89 .89 .89 .89 .89 .89 .89 .89 .89	.57 .57 .34 .28 .20 .14 .07 .03 .15	559 4788 47 1 5 9 3 4 7 1 8 9 3 4 7 1 8 9 3 4 7 1 8 9
0.80 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 50.0 60.0 70.0 80.0 90.0	.16 -1.21 -1.35 -1.26 -1.27 -1.20 -1.06876961382619	.05 -1.27 -1.25 -1.19 -1.16 -1.01 88 82 74 67 60 36	11 -1.05 -1.05 -1.05 -1.05 -1.02 97 86 83 76 72 66 54	- 25 - 96 - 98 - 99 - 90 - 90 - 84 - 85 - 81 - 79 - 66 - 72	-39 -1.00 -1.00 -1.00 -2.00 -37 -38 -38 -38 -38 -38 -38 -38 -38 -38 -38	- 55 -1.03 -1.04 -1.01 -1.01 -999 - 94 - 85 - 76 - 60 - 56		.57 .40 .25 .16 .14 .09 .07 .08 .09 .05	.59 .45 .29 .20 .16 .10 .06 .06 .06		.59 .53 .37 .29 .15 .08 .04 .04 .01 .10	.58 .54 .32 .32 .37 .18 .09 .07 .09 .00 .00 .00 .00 .00 .00 .00 .00 .00	.55 .56 .34 .39 .20 .01 .05 .15
0.94 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 50.0 60.0 90.0 95.0	.28 -1.34 -1.28 -1.20 -1.16 -1.04 51 66 51 40 26 17 09	.19 -1.29 -1.23 -1.22 -1.18 -1.01 94 81 75 64 58 19 39 29	.04 -1.15 -1.20 -1.11 -1.07 96 93 78 71 67 59 59 83 38	11 -1.04 -1.11 -1.03 -1.03 95 82 81 72 69 51 51	- 25 - 95 -1.00 - 96 - 91 - 80 - 75 - 66 - 55 - 67	- 35 - 80 - 80 - 81 - 76 - 77 - 72 - 72 - 67 - 63 - 60 - 54 - 51		.52 .29 .20 .12 .10 .05 .03 .02 .04 .06 .05	.56 -33 .24 .15 .11 .05 .01 .01 .01	.56 .37 .28 .20 .14 .07 .02 .01	18 1988 H 988 H 1885 H 8	.55 .35 .26 .20 .10 .05 .01	.52 .37 .29 .21 .05 .01

TABLE XVII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.90; R = 2,000,000; PROPELLERS REMOVED
(a)  $\alpha_U = -2^{\circ}$ ,  $0^{\circ}$ ,  $2^{\circ}$ ,  $4^{\circ}$ ,  $6^{\circ}$ ,  $8^{\circ}$ 

	Per-			Upper 1	Burface					Lover	Surface		
Spanvise Stations	cent			Angle o	f attack					Angle o	f attack		
Donotons	chard.	_p°	00	20	Ťo	60	80	-20	00	20	10	60	80
0.10 7/2	0 1.5 4.0 10.0 10.0 20.0 20.0 20.0 20.0 20.0 20	84985344848484 61111111	0.338 6.388 6.388 6.45 6.45 6.45 6.45 6.45 6.45 6.45 6.45	0.68 -15 -08 -126 -132 -138 -148 -148 -153 -159 -14	0 12 23 6 23 6 23 6 23 6 23 6 23 6 23 6 2	0.72 - 21 - 34 - 35 - 35 - 37 - 36 - 61 - 61 - 63 - 27 - 23	0.68 - \$1 - 56 - 72 - 67 - 67 - 66 - 79 - 66 - 79 - 88 - 33	10 11 11 11 11 11 11 11 11 11 11 11 11 1	0.01 21 27 27 36 36 33 31	0.18 -04 -146 -17 -185 -304 -186 -186 -186 -186 -186 -186 -186 -186	0.36 .13 0 0k 06 11 16 23 36 27	0.51 .28 .07 .04 02 07 14 19 04	0.4 4 477.13 68 68 67 68 67 68 67 68 67
0.13 p/2	0 1.5 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	111111 88446666 466668	72.68 20.31.50 29.55.55.29.61.50 20.61.5	\$50884   111118 8508844   858884	#14488 868PP3814	66 - 44 - 74 - 80 8 4 - 78 8 37 4 8 8 7 4 8 8 7 4 8 8 7 4 8 8 7 4 8 8 7 4 8 8 8 7 8 8 8 8	.54 66 98 98 -1.12 -1.17 88 84 84 25	11   11   11   11   11   11   11   11	8.7   8.4 8.8   5.4   5.6   1.5   1.		. 25 . 25 . 26 . 26 . 27 . 26 . 37 . 36 . 37 . 36 . 37 . 36 . 37 . 36 . 37 . 38 . 38 . 38 . 38 . 38 . 38 . 38 . 38	.60 .40 .20 .02 .36 .74 .03	.89 5.5 1.33 1.33 1.35 1.35 1.35 1.35 1.35
0.31 Ъ/2	0 1.5 4.0 10.0 15.0 20.0 30.0 50.0 70.0 80.0 90.0	8822282849445555555555555555555555555555	455757575663663344 	5034588855588838888888888888888888888888	57585588838da78	\$6868885585888884 11111144411111	.5538.2 -538.2 -538.2 -538.2 -14.0 -16.0 -16.0 -16.0 -16.0 -16.0 -16.0 -16.0 -16.0 -16.0 -16.0 -16.0 -	346 886988 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	123 150 163 153 163 173 160 160 160	05 05 05 12 13 13 13 13 13 13 14 15 16 16 16 16 16 16 16 16 16 16 16 16 16	16 106 118 129 129 129 129 129 129 129 129 129 129	.36 .14 -03 -06 -08 -11 -12 -26	0.30   25 5 5 5 1 N   4 H
0.375 b/2	0 1.5 1.0 15.0 15.0 20.0 50.0 70.0 95.0		.48 .22 .01 .133 .133 .151 .164 .169 .169 .166 .166 .166 .166 .166 .166	ନ୍ତ୍ରହନ୍ତର । ଜଞ୍ଚଳର ଅଧ୍ୟ	64888888888888888888888888888888888888	88868888 8884788 111114 7111111		54 88885 155 as	287 637934 637934 148 148 148 148 148	50   555588   30   58 	នៃ ដូច្ចី នៃ នេះ	# 12   05 05 05 05 05 05 05 05 05 05 05 05 05	48 48 84 48 48 48 48 48 48 48 48 48 48 4
0.44 b/2	0 1.50 10.0 15.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0 2	54 .36 .38 .11 .35 .11 .15 .16 .16 .16 .16 .16 .16 .16 .16 .16 .16	6.888888888888888888888888888888888888	~ F	1111111111 Professors	11111111111111111111111111111111111111	.50 6.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7.4 7	34.60   61.00		205 1634808453750 1 134808453750 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	16. 16. 16. 16. 16. 16. 16. 16. 16. 16.	.58 .39 .01 .29 .24 59 .32 .32 .32 .32 .32	69 H114680666 445

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TABLE XVII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.90; R = 2,000,000; PROPELLERS REMOVED - Continued (a)  $\alpha_{\rm U}$  = -2°, 0°, 2°, 4°, 6°, 8° - Concluded

	Per-			Upper	surface						Lower	surface		
Spanwise stations	cent			Angle o	of attack						Angle o	of attack		
P CO C C C C C C C C C C C C C C C C C C	chord	-00	00	20	40	6°	80	_	_e°	8	20	70	60	80
0.56 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	0.25 -0.15 -0.15 -0.27 -0.27 -0.25 -	0.38 -1.15 -1.30 -1.57 -1.56 -1.56 -1.56 -1.56 -1.56 -1.14 -1.68	0.47 02 29 54 73 80 22 25 25 12 01	0.54 -1.192 -1.58 -1.693 -1.89 -1.89 -1.30 -1.30 -1.19 -1.00 -1.00	0.54 35 55 68 91 96 89 89 36 36 36 36	0.51 53 71 86 -1.00 -1.04 -1.09 -1.05 51 51 29 18		9.50 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	9.34 1.60 1.79 1.63 1.50 1.30 1.00 1.00 1.00 1.00 1.00 1.00 1.0	9 139 155 339 34 150 388 6 17 17 189 34 150 388	0.15 1.28 1.28 1.28 1.28 1.28 1.28 1.48 1.48 1.48 1.48 1.48 1.48 1.48 1.4	0.28 .04 10 14 14 14 14 15 05	0.41 .17 .01 .04 .06 .06 .09 .19 .12 .07 07
0.68 ზ/2	0 1.5 4.0 10.0 15.0 20.0 30.0 50.0 70.0 80.0 95.0	<b>଼</b> ≇%ଞ୍ଚଳଶ୍ୟକ୍ଷ୍ୟମ୍ୟ ମ	335788337883789 111111111111	\$	568 	\$.40%\$\$\$\$\$\$\$\$\$\$# 	-53 -51 -84 -93 -99 -99 -95 -66 -66 -51 -30 -37		82 99 -1. 95 -1. 10 -1. 10 -1. 10 -1. 02 05 05 12 12	1.54.75 1.88.45.24.4 1.65.24.4 1.65.24.4 1.65.93.4 1.65.93.4 1.65.93.4	14 434 7015 000 00 13	192 1-192 1-192 1-193 1-	27 .66   57 .4 .4 .4 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5	.40 .19 .04 04 05 07 06 01 .01 06 12
ი.მი ъ/2	0 1.5 4.0 7.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	ଞ୍ଚୁଞ୍ଜୁଟ୍ଟେମ୍ବର୍ଷ ଅଷ୍ଟ୍ରମ୍ପର ଜଣ୍ଣ (୧୯୯୮)	\$5.78488888888458	&798525283*5989 	64.36.86.25.25.66.66.66.66.66.66.66.66.66.66.66.66.66	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	. 19 65 80 86 -1. 06 -1. 06 -1. 01 74 61 51 51 26 17		7380 (35505) H&&A4498	-73 -85 -76 -74 -64 -23 -08 -01 -08 -01 -08 -01 -08 -01 -08 -01 -08 -01 -08 -01 -08 -01 -08 -01 -08 -08 -08 -08 -08 -08 -08 -08 -08 -08	143 3 3 5 8 8 15 8 8 17 1 1 1 1 1 1 1 0 8 8 17	1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3000 1 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	.43 .21 .06 0 0 03 01 .01 .05 .06
0.9k b/2	0 1.5 4.0 7.0 10.0 15.0 30.0 40.0 50.0 70.0 80.0 95.0	ଞ୍ୟୁ ଅନ୍ତର୍କ ମୁଷ୍ଟର୍ଷ ସମ୍ବର୍ଚ	638888888888888888888888888888888888888	\$4558###################################	588355888845584 6666666666	\$38888847258888 6111111111110	567885887585588217 		57 554 1.29 1.29 1.20 1.20 1.106 1.004	899 34857494 54454 11 11 11 11 54454	15 15 8888 88 15 1 A 15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	dh	\$66.00   \$6.00	.39 .13 .05 01 05 05 05 05 01 .02

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TABLE XVII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.90; R = 2,000,000; PROPELLERS REMOVED - Continued (b)  $\alpha_{\rm u}$  = 10°

	1_		 Upper	surface	 			 Lower	r surface		
Spanwise Stations	Fer-			of attac		1 1		Angle	of attac	k	
0.10 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	10° 0.61667587898176747487					.34 .27 .22 .14 .09 .01 .05				
0.19 b/2	0 1.5 4.0 7.0 15.0 20.0 30.0 \$0.0 70.0 80.0 95.0	88642588 HASS86488					.46 .24 .06 11 04				
0.31 b/2	0 1.5 4.0 70.0 15.0 20.0 30.0 50.0 60.0 70.0 80.0 95.0	.50 96 96 1.11 1.10 96 88 73 64					.61 .43 .24 .16 .14 .06 .0e 0e				
0.375 b/2	0 1.5 7.0 10.0 15.0 20.0 50.0 50.0 70.0 80.0 95.0	-40 -1.05 -1.05 -1.05 -1.03 -1.03 -1.03 -1.03 -1.03 -1.03 -1.05 -1					.61 .45 .16 .19 .02 -05 -25 -26				
0.44 b/2	0 1.5 k.0 7.0 10.0 15.0 20.0 \$0.0 \$0.0 60.0 70.0 80.0 95.0	. 386 -1. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.					.70 .58 .24 .01 .37 .56 .10 14 12				

CONTENTAL



TABLE XVII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.90; R = 2,000,000; PROPELLERS REMOVED - Concluded (b)  $\alpha_U$  = 10° - Concluded

	Per-		<del></del>	Upper	surface	 1	<del></del>		Lover	surface	 
Spanwise stations	cent				of attack					f stack	
JURI TOUR	chord	10°					10°				
0.56 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 50.0 50.0 70.0 90.0 95.0	0.46 69 94 94 190 -1.12 -1.14 -1.10 71 70 30					0.50 .27 .10 .04 .01 03 05 06 14 11 15				
0.68 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 95.0						.47 .27 .27 .03 .03 .05 .06 .06 .04 .05 .06				
0.80 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 90.0 95.0	7558698698888885988888598888888888888888					.48 .28 .21 .04 .02 03 04 05 05	•			
0.9% 7/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 50.0 60.0 70.0 80.0 90.0	.44 88 99 99 99 91 78 78 75 59 36 33					44 18 04 07 07 09 09 09 09 09				

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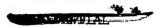


TABLE XVIII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.165; R = 8,000,000; PROPELLERS REMOVED (a)  $\alpha_u$  = -2°, 0°, 2°,  $\mu$ °, 6°, 8°

Spanwise	Per-		Ū	pper surf	ace					L	ower surf	sce		
stations	chord			gle of at		<del></del>	-	7			gle of at			
0.10 b/2	0 1.5 7.0 10.0 20.0 30.0 40.0 50.0 70.0	-e° 0.16 .34 .14 .02091421211515	0° 0.42 .17 04 13 22 29 31 30 26 20 20 17 13	0.54 04 23 36 40 36 31 25 26	0.54 -333 -446 -52 -52 -51 -38 -31 -26 -24	6° 0.45 65 66 66 66 66 35 30 30 20	9° 0.22 -1.02 94 86 81 77 72 61 50 40 34 21		-0.68 61 50 41 32 25 20 12 06	-0.31 37 36 36 25 19 14 07	-20 13 21 25 19 11 09 01	0.25 .07 11 09 07 04	0.43 .25 .06 0 .01 .01 .01 .05	.19 .10 .10 .07 .07 .06 .09
0.19 b/2	90.0 95.0 0 1.5 4.0 7.0 15.0 20.0 40.0 50.0 60.0 70.0 80.0 90.0	03 .05 .06 .37 .02 04 15 23 24 16 11 01	05 .04 .39 .22 12 16 20 30 31 21 17 13 03	04 .03 .54 14 37 35 33 43 29 24 20 20 20	16 .04 53 66 56 56 58 44 35 27 23 15 03	05 .03 99 77 75 73 50 31 27 03	06 .03 -1.07 -1.34 -1.09 89 765 57 35 35 35 35 35		.55 -755 -837 -88 -88 -88 -88 -88 -88	୍ଟ୍ର ଅନ୍ତର୍ଗ ବର୍ଷ	.05, .04, 16, 15, 17, 11, 08	.06 .05 .30 .11 04 05 03 03 .06	.08 .06 .47 .88 .32 .57 .64 .59 .68	.09 .07 .41 .24 .15 .09 .08
0.31 b/2	0 1.5 20.0 20.0 30.0 50.0 60.0 70.0 80.0 90.0 95.0	.05 .43 .05 14 17 20 15 15 15 15	.39 .33 .33 .33 .33 .33 .33 .33 .33 .33	559 - 539 -	.50 59 59 59 57 55 55 55 31 31 31 31 31	.35 95 96 79 76 56 51 34 34 39	23 -1.49 -1.15 80 55 54 38 38 54 54 55 54 55		499 H H B 44 C 4 C 4 C 4 C 4 C 4 C 4 C 4 C 4 C	-30 -36 -36 -29 -29 -18 -17 -17 -07 -01	.06 07 13 15 10 06 09	.05 .06 .08 .08 .08 .09 .09	.50 .33 .15 .66 .07 .04 .04 .06	.55 .26 .19 .15 .11 .10 .10
0.375 ъ/2	0 1.5 4.0 7.0 15.0 20.0 30.0 40.0 50.0 60.0 80.0 90.0	.05 03 15 20 15 10 15 11 15 15 15	.39 .19 01 14 20 25 26 27 27 21 14 03	-54 -29 -343 -44 -35 -35 -35 -15 -04	48 - 59 - 66 - 55 - 12 - 135 - 17 - 105	.20 -1.11 86 83 75 69 19 19 19 18 04	- 32 -1.74 -1.29 -1.18 -1.06 - 93 - 84 - 36 - 36 - 29 - 04 - 04		24 67 51 33 36 26 19 06 02	29 35 30 28 24 18 12 03 .01	08 09 13 14 12 10 06 01 .01	.36 .15 .04 01 01 01 0 .05 .06	.51 .35 .18 .11 .10 .06 .06	.56 .15 .29 .21 .17 .13 .11 .11
0.44 b/2	0 1.5 1.0 15.0 20.0 30.0 50.0 50.0 70.0 80.0 95.0	04 .41 .20 .06 01 14 19 19 18 16 14	.37 .17 02 13 24 26 27 26 24 21 19 10 05	.54 30 39 40 38 36 36 21 25 05	.50 ~ .58 ~ .60 .55 .58 	1119998669899985585	31 -1.71 -1.33 -1.20 -1.99 93 59 56 36 36 36 36 36 36 36		83 70 51 35 25 20 11 06 01	-32 -40 -32 -28 -23 -17 -07 -03 .03	.09 08 13 14 09 07 01 .05 06	.38 .14 .04 01 01 01 01 01 .04 .06	.53 .34 .18 .12 .10 .07 .05 .06 .09 .11	.56 .46 .29 .22 .18 .11 .11 .11



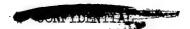


TABLE XVIII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.165; R = 8,000,000; PROPELLERS REMOVED - Continued (a)  $\alpha_u$  = -2°, 0°, 2°, 4°, 6°, 8° - Concluded

Spanvise	Per-				surface							surface		
stations	chord		00	Angle o	of attack	(A)	80	1		90		of attack	60	- 30
0.56 b/2	0 1.5 4.0 7.0 15.0 20.0 30.0 40.0 50.0 60.0 90.0 95.0	-e° -0.11 .14 .23 .10 00809141715131001	0.34 .21 02 12 18 22 33 24 22 20 11	0.72 12 29 35 40 39 36 33 29 24 20 14	0.46 61 61 56 49 40 35 28 28 28	0.11 -1.12 95 88 74 66 56 56 40 32 25 25 01			-20 -0.99 72 53 35 26 11 11	-0.41 -0.43 29 23 18 11 06	0.04 09 15 12 09 02 07 .07	0.39 .17 .04 01 0 0 .01 .03 .03 .10 .10	0.52 .34 .11 .10 .07 .08 .09	8° 0.5% 30 1.23 1.23 1.23 1.23 1.23 1.23 1.23 1.23
0.68 b/2	0 1.5 4.0 7.0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	.50 .26 .13 .05 02 08 13 11 15 12 11 09		0 - 26 - 30 - 36 - 34 - 33 - 34 - 30 - 26 - 21 - 18 - 14 - 02	-, h1 , 59 , 57 , 54 , 45 , 39 , 34 , 22 , 15 , 04		-1.58 -1.35 -1.16 -1.05 80 69 55 26 35 26		-1.13 82 57 46 37 26 26 20 01 03 .06	7.51 49 35 25 19 19 19 01 .01 .05	04 15 16 19 05 05 05 05 05 05	.30 .31 .02 01 01 01 01 05 .06 .08	.16 .10 .09 .09 .09 .09 .09	1.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4
0.80 b/2	0 1.5 1.0 10.0 15.0 20.0 30.0 50.0 60.0 80.0 90.0	18 .50 .31 .17 .09 .01 0k 11 12 11 10 08	.33 .32 .09 03 08 14 17 19 19 16 11 10	.57 .08 17 30 29 27 27 27 25 18 10	.54 40 48 49 47 47 36 35 31 26 21 03	.19 92 83 71 65 59 47 44 37 30 25 16	- 45 -1.55 -1.18 -1.06 97 84 74 51 43 34 26 03		-1.32 89 61 50 39 28 07 01 02	- 66 - 58 - 40 - 134 - 159 - 04 - 05 - 05 - 05 - 05	15 22 18 14 11 01 01 04 01		.33 .37 .06 .04 .05 .06 .08 .09	.57 .42 .27 .18 .15 .11 .09 .09 .10
0.94 b/2	0 1.50 7.00 15.00 30.00 30.00 780.00 780.00 95.00	82 .52 .36 .22 .13 .06 .03 0 05 11 11 09 06	0739995 076889955445005	.16 05 15 16 15 13 21 21 21 21	54 - 1336 - 1336 - 1 - 1327 - 1 - 1327 - 1 - 1327 - 1 - 1 - 1 - 1 - 0 5	- 50 - 50 - 50 - 50 - 50 - 50 - 50 - 50	8448885858588958		-1.73 64 51 27 18 10 04 08	7.525.36 7.5	39 29 29 27 13 09 05 05	06 10 10 08 06 05 01 01 03 04 06	36,000,000,000,000,000,000,000,000,000,0	.93 .26 .19 .12 .10 .06 .05 .05

.val



TABLE XVIII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.165; R = 8,000,000; PROPELLERS REMOVED - Continued (b)  $\alpha_{\rm L}$  = 10°, 12°, 14°, 16°, 18°, 20°

Spanwise	Per-	L		Upper	mirface					Lover	aurface		
stations	cent			Angle o	of attack					Angle o	f attack		
0.10 %/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0 95.0	10° -0.14 -1.42 -1.21 -1.069982675336292206	12° -0.66 -1.93 -1.55 -1.33 -1.22 -1.06743939393939	14° -1.25 -2.43 -1.88 -1.57 -1.39 -1.068265504131210601	16° -1.92 -2.93 -2.19 -1.75 -1.31 -1.89 -7.43 -7.43 -7.43 -7.43	18° -2.74 -2.56 -2.64 -1.75 -1.85 -1	8 7 1 9 9 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	.10 .062 .50 .20 .20 .15 .13 .11 .13 .14	12° 0.64 .60 .30 .26 .22 .20 .16 .17 .17	14° 0.60 .6649 .39 .36 .24 .22 .2114 .09	16° 0.53 .70 .57 .45 .34 .28 .25 .24	16° 0.40 .73 .64 .51 .39 .33 .30 .29 .26	20° 0.24 -73 -69 -58 -54 -38 -34 -33 -30 19 -13
0.19 b/2	0 1.5 1.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 90.0 95.0	66 -2.16 -1.69 -1.28 -1.16 -1.04 84 73 47 36 28 16	-1.50 -2.162 -1.162 -1.165 -1.165 -1.166 -1.	+369 +369 +1413 +175 +1813 +18	144899886688888484868	-1.77 -5.37 -2.15 -1.77 -1.38 -1.85 -1.86 -1.10 -1.09	-6.39 -6.39 -2.43 -1.53 -1.15 -89 -2.43 -1.15 -89 -34 -30 -34	.56 .50 .35 .26 .22 .16 .15 .13	.16 .16 .11	.32 .59 .50 .43 .37 .30 .25 .20	.1957 .5592.559 .892.	17 -53 -59 -53 .49 -41 -35 -28 -25 15	-53 -63 -59 -54 -45 -40 -31 -29
0.31 b/2	0 1.5 1.0 7.0 15.0 20.0 30.0 50.0 70.0 80.0 95.0	-87 -2.13 -1.70 -1.86 -1.93 -1.88 -1.98 -1.98 -1.98 -1.98	1.85 14.55 14.55 14.56 1.86 1.86 1.86 1.86 1.86 1.86 1.86 1.8	49883388885588333	54794876#9559811855	-5.46 -5.40 -5.63 -2.82 -1.49 -1.79 56 35 15 09 10	-7.08 -6.40 -4.18 -3.17 -2.59 -2.01 -1.10 -7.60 -1.10 -7.75 33 -25 33 -20 35	.51 .54 .37 .29 .24 .19 .15 .15	39 57 5 38 88 88 88 88 88 88 88 88 88 88 88 88	146 . 50 . 50 . 50 . 50 . 50 . 50 . 50 . 5	-,14 -,50 -,59 -,49 -,41 -,35 -,30 -,21 -,21 -,07	752 142 153 148 149 153 148 149 149 149 149 149 149 149 149 149 149	-95 -95 -98 -58 -53 -53 -35 -35 -26 -13
0.375 b/2	0 1.5 7.0 10.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 95.0	1942 1477 1477 1477 1688 1889 1889 1889 1889 1889 1889 1889	999238883482543853	71 4414 1 1 1 1 1 1 1 0	19149868887853490 11794411111111111	4-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	7-5-82 7-5-82 7-5-82 7-5-82 7-7-8-60 7-8-60 7-80 7-8-60 7-8-60 7-8-60 7-8-60 7-8-60 7-8-60 7-8-60 7-	.51 .5* .39 .30 .26 .27 .15 .15 .12 .10	.36 .57 .38 .33 .26 .22 .17	13 54 153 493 87 142 151 151 151 151 151 151 151 151 151 15	-,18 .50 .51 .51 .45 .37 .31 .24 .24	56 41 59 53 49 36 28 28 27	-1.00 .28 .51 .52 .45 .39 .31 .27
0.44 b/2	0 1.5 1.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	1.05 -2.37 -1.76 -1.33 -1.97 -1.39 -1.39 -1.39 -1.00	-9.10 -3.21 -9.29 -1.66 -1.31 -1.90 50 50 50 50	7.88 4.76 4.76 4.91 4.91 4.33 7.74 7.94 7.94 7.94 7.94	1.59 1.87 1.87 1.14 1.46 1.46 1.46 1.46 1.46 1.46 1.46	6.887553486442994411	7-6-1-7-8-8-8-4-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	.51 .55 .39 .30 .26 .20 .16 .15 .15	.32 .78 .46 .36 .34 .26 .21 .20 .19 .18	.06 .56 .53 .39 .39 .39 .39 .39 .39 .39 .39 .39 .3	31 .50 .56 .50 .46 .37 .31 .29 .26 .24	76 .40 .59 .54 .35 .35 .38 .26	-1.31 .27 .58 .56 .39 .31 .28



TABLE XVIII.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.165; R = 8,000,000; PROPELLERS REMOVED - Concluded (b)  $\alpha_{\rm u}$  = 10°, 12°, 14°, 16°, 18°, 20° - Concluded

	Per-			Upper	surface					Lower	surface		
Spanvise stations	cent				of attack						of attack		
BOACTOLIS	chard.	10°	120	140	160	180	500	100	120	140	160	1B <sub>0</sub>	500
0.56 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 80.0 90.0	1.38 2.479 1.79 1.34 1.575 6.51 1.38 1.00 1.00 1.00	-2.56 -3.40 -2.34 -1.94 -1.66 -1.37886955403116	-1.99 -2.83 -1.92 -1.558 -1.95	5.37 -5.13 -6.13 -6.13 -6.13 -1.39 -1.39 -1.39 -1.39 -1.39 -1.39 -1.39 -1.39 -1.39 -1.39 -1.39	-7.12 -6.16 -3.85 -e.98 -e.14 -1.50 -1.678363503726159	8.99 -7.14 -4.36 -3.32 -2.04 -1.61 -1.14 -2.61 -1.71 -3.50 -1.10	0.51 .75 .39 .31 .26 .26 .18 .16 .15 .15	0.30 -57 -46 -39 -34 -26 -23 -20 -19 -16 -11	0.02 -58 -54 -40 -37 -27 -27 -21 -19 -14	-0.34 -5.51 -5.51 -3.55 -3.73 -3.33 -2.9 -2.4 -2.0 -1.50	-0.82 -11 -59 -54 -50 -36 -31 -26 -29 -16 -10	-1.37 .28 .57 .54 .45 .39 .35 .25 .16
0.68 b/2	0 1.50 7.0 10.0 20.0 30.0 40.0 50.0 70.0 90.0 95.0	+1.79 -1.48 -1.79 -1.80 -1.80 -1.87 -1.77 -1.77 -1.77 -1.77	-3.09 -2.34 -1.88 -1.63 -1.35 -1.19 69 55 39 26 14 0	-1.90 -2.84 -1.90 -1.54 -1.31 -1.00 -39 -39 -1.01	198819848998589858	5.69 5.86 7.89 7.89 7.19 7.19 7.19 7.19 7.19 7.19 7.19		रहे । इंश्रेश्वर । मृत्र्भन्	.34 .37 .34 .36 .31 .26 .21 .19 .16 .17	.08 .78 .53 .46 .39 .31 .26 .21 .18	-53 -56 -50 -50 -57 -37 -37 -37 -37 -37 -37 -37 -37 -37 -3	71 .44 58 .54 .48 .41 .34 .26 .22 .18 .10	-1.22 .31 .57 .53 .45 .37 .37 .29 .49 .10 .03
0.80 ъ/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	1.88 1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	-e.62 -3.02 -e.14 -1.76 -1.53 -1.27 -1.07 65 52 39 15 02	-1.89 -1.47 -1.47 -1.59 -1.56 -1.60 -1.60 -1.60	54 m9977 - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7.58877886445757986444	-9.53 -6.44 -4.07 -3.09 -2.52 -1.55 -1.08 -78 -36 -36 -36 -36 -36	.37 .28 .24 .18 .13 .12 .11	.43 .55 .36 .31 .25 .18 .16 .13	.21 .58 .51 .43 .38 .30 .22 .19 .17 .14	- 07 - 51 - 51 - 49 - 49 - 49 - 49 - 49 - 49 - 49 - 49	41 .47 .59 .53 .48 .39 .28 .25 .15 .10	
0.94 7/2	0 1.5 4.0 7.0 10.0 20.0 30.0 \$0.0 70.0 80.0 90.0	- - - - - - - - - - - - - - - - - - -	-1.66 -2.26 -1.86 -1.51 -1.07 -1.07 -1.62 53 41 32 32 31 01	2.85 -2.95 -2.95 -1.50 -1.50 -1.50 -1.50 -1.50 -1.55 -1.55 -1.55 -1.51 -1.51		\$4555555555555555555555555555555555555	7-73 -7-228 -7-2-8-55 -7-18-56	.56 .38 .32 .21 .17 .11 .09 .06 .06	\$ 3888 88977   88888	.35 .52 .46 .36 .30 .22 .16 .11 .09	- 19 - 19 - 55 - 58 - 38 - 38 - 38 - 38 - 38 - 38 - 38 - 3	21 -58 -55 -46 -39 -31 -24 -18 01	60 57 58 59 56 35 35 35 35 35 35 35 35

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TABLE XIX.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000; PROPELLERS REMOVED (a)  $\alpha_{\rm L}$  = 2°, 4°, 6°, 8°, 10°, 12°

	Per-				Surface					Lower S	urface		
Spannise stations	cent				f attack					Angle of			
0.10 ъ/2	0 1.5 4.0 7.0 15.0 20.0 40.0 50.0 60.0 90.0	0 58444488844444444444444444444444444444	2 28 5 28 6 6 6 8 2 7 3 2 8 5 5 6 6 6 8 2 7 3 2 8 5 5 5 5 5 5 6 6 6 8 2 7 3 2 8 5 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	60 0.23 -1.95 -1.95 -1.73 -1.73 -1.73 -1.73 -1.74 -1.75 -1.7	8° -0.15 -1.22 -1.03 -1.03 -1.05 -1.	10° -0.69 -2.07 -1.40 -1.23 -1.10 -1.84 -73 -88 -55 -51 -51	20 4.20 4.20 4.20 4.12 4.12 7.12 7.12 7.12 7.12 7.12 7.12 7.12 7	0.23 .03 .05 .05 .05 .04 .01 .04 .10 .17	0.43 .23 .09 .07 .05 .05 .08 .11 .20	0.59 .41 .25 .25 .16 .14 .17 .20 .25	80 0.55 .57 .57 .58 .88 .88 .88 .88 .88 .88 .88 .88 .88	0.66 .63 .47 .40 .30 .30 .30 .30 .30 .30 .30 .30 .30 .3	0.61 .70 .88 .83 .75 .75 .89
0.19 b/2	0 1.5 4.0 7.0 15.0 20.0 20.0 20.0 50.0 60.0 60.0 90.0	11111111111111111111111111111111111111	-27 -1.17 -1.07 -93 -83 -63 -54 -51 -49	#85512158   P86585895	1.87 1.87 1.87 1.20 1.66 1.66 1.50 1.40 1.40 1.40 1.40 1.40 1.40 1.40 1.4	\$2.500 pt   98.500 pt   93.500	3.98 4.91 4.91 7.59 1.59 1.59 6.68 6.88 7.88	.40 .20 .07 -19 -08 .01 -24 -35	.57 .41 .23 .13 .05 -10 .07 -19 .25	.62 .58 .40 .38 .19 .13 .14	5.6 5.3 Bar 2.4	85   85 - 85   85   45   45	59 54 39 34 35 35 35 35
0.31 в/2	0 140 700 1500 1500 1500 1500 1500 1500 1500	4607477747865 - 77747865 - 7515150 - 7515150 - 752	-23 -1.07 -1.07 -1.08 -28 -28 -28 -25 -25 -25 -25 -25 -25 -25 -25 -25 -25	-1.66 -1.46 -1.45 -1.57 83 67 67 67 57 53	(444444) (1111118888888888888888888888888888888	17441111111111111111111111111111111111	94.88 94.88 94.98 94.77	.29 .11 .02 .03 .03 .04 .04	.15 .09 .10 .08 .10 .08 .10	.60 .49 .30 .23 .20 .18 .16 .18	.63 .64 .85 .36 .34 .34 .35 .35 .35 .53	.52 .67 .35 .45 .30 .31 .30	34 .72 .656.52 .44 .398 .49 .59
0.375 b/2	0 1.5 4.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0		.03 -1.43 -1.19 -1.13 -1.02 86 61 55 53 50 41	-64 -2.19 -1.57 -1.42 -1.16 -1.05 -78 -60 -55 -31 -40	-1.66 -3.08 -2.08 -1.63 -1.41 -1.25 -88 -59 -54 -43 -39	9.566 9.35 9.456 9.456 9.45 1.456 1.559 1.	+.57 -5.33 -3.86 -2.86 -1.86 -1.61 -1.95 -3.61 -1.35	.39 .18 .05 .01 .04 .06 .18 .27	.55 .38 .16 .14 .12 .15 .21 .31	.58 .52 .36 .27 .24 .20 .20 .20 .25 .34	.46 .59 .40 .35 .29 .28 .36 .36	.25 .60 .49 .44 .37 .35 .40 .39 .38	14 55 56 52 45 43 39 45 41 52
0.44 b/2	0 1.5 1.0 10.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 95.0	35 1	-25 -1.41 -1.23 -1.01 91 66 55 34	-1.20 -2.57 -1.82 -1.63 -1.44 -1.22 -1.69 767 60 747 35 31	-2.58 -2.41 -2.05 -1.76 -1.26 -1.26 75 75 75 75 75	323 355 355 355 355 355 355 355 355 355	\$5,544,44,4,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1	.53 .33 .16 .06 .01 .01 .09 .11 .19 .26	.61 .53 .24 .17 .10 .13 .17 .22 .26	.51.64 .52.39 .31.22 .20.39 .39.45	22 - 654 531-46 25 - 25 25 - 25 25 25 - 25 25 25 - 25 25 25 - 25 25 25 25 25 25 25 25 25 25 25 25 25 2	-27 -57 .73 .64 .56 .56 .33 .30 .35 .40	- 93 - 40 - 772:668 - 40 - 40 - 33 - 33 - 44 - 30





TABLE XIX.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000; PROPELIERS REMOVED - Continued (a)  $\alpha_u$  = 2°, 4°, 6°, 8°, 10°, 12° - Concluded

	Per- cent chord	Upper surface							Lower surface					
Spanvise		Angle of attack						-	Angle of attack					
stations		₹.	ΙĐ	6°	8	10	120		20	40	6°	80	10°	120
0.56 b/2	0 1.5 4.0 7.0 15.0 20.0 20.0 50.0 70.0 80.0 95.0	0.46 0.71 0.57 0.57 0.57 0.57 0.57 0.57 0.57 0.57	0.19 -1.09 -1.05 -1.00918670625649492510 0	-0.33 -1.46 -1.35 -1.50	1.11 -2.44 -1.67 -1.45 -1.24 -1.05 51 51 27 03	-2.14 -3.29 -2.37 -2.07 -1.47 -1.24 -1.25 -1.47 -1.25 -1.47 -1.25 -1.47 -1.25 -1.47 -1.25 -1.47 -1.25 -1.47 -1.25 -1.47 -1.25 -1.47 -1.25	34444444444444444444444444444444444444		0.89 .05 .05 09 09 05 05 05 05 05	0.51 .28 .10 .07 .04 .01 .02 .01	0.60 .46 .46 .20 .15 .10 .09 .07	0.60 .57 .40 .25 .18 .13 .13 .05	0.49 .66 .51 .42 .36 .26 .23 .19 .06	0.28 .69 .62 .52 .52 .53 .63 .63 .63 .63 .63 .63 .63 .63 .63 .6
0.68 b/2	0 1.5 7.0 10.0 15.0 20.0 \$0.0 \$0.0 50.0 70.0 80.0 90.0	585888899884788	.33 -96 -96 -89 -81 -58 -58 -58 -58 -58 -58 -58 -59 -68 -68 -68	389 0358 283888888888888888888888888888888888	1.05 -2.39 -1.59 -1.59 -1.06 -1.06 -1.49 -1.06 -1.49 -1.00 -	4.37 4.38 4.74 4.74 4.74 4.74 6.65 8.88 1.04 1.14 1.14 1.14 1.14 1.14 1.14 1.14	74794444111111000		-100 -100 -100 -100 -100 -100 -100 -100	.46 .27 .11 .06 .04 .01 .04 .07 .08 .10	.56 .43 .26 .18 .10 .10 .10	.51 .54 .38 .29 .18 .15 .11 .12 .10 .08	.32 .57 .46 .38 .32 .24 .20 .14 .14	01 55 54 46 41 32 26 19 16 19 16
0.80 <b>b</b> /2	0 1.500 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5284444586848534	3777574865755455304 	14004 11004 11004 11004 11004 11004 11004 11004	-1.13 -2.16 -1.55 -1.23 -1.05 -89 -79 -38 -1.6 -02	43.08 43.09 41.75 41.75 41.75 66.75	ምትላት ተተተ ፣ ፣ ፣ ፣ ፣ ፣ ፣ ፣ ፣ ፣ ፣ ፣ ፣ ፣ ፣ ፣ ፣		12 -12 -12 -12 -13 -13 -13 -13 -13 -13 -13 -13 -13 -13	.41 .21 .07 .08 .08 .04 .06 .07 .08	.56 .39 .22 .24 .13 .10 .10 .10	.56 .50 .50 .25 .20 .16 .11 .11 .11 .10 .09	.42 .56 .44 .30 .22 .16 .15 .14 .11	न् नुरुष्ट्री सम्बद्धः । सङ्ग्रह्मा सम्बद्धः । सङ्ग्रह्मा सङ्ग्रह्मा
0.94 7/2	0 1.5 1.0 10.0 15.0 20.0 30.0 40.0 50.0 70.0 80.0 95.0	524 - 29 - 29 - 29 - 29 - 29 - 29 - 29 - 29	-53 -51 -51 -52 -40 -31 -38 -38 -31 -30 -30 -30 -30 -30 -30 -30 -30 -30 -30	.24 94 87 62 764 37 32 28 12 0.05	38 -1.56 -1.20 -1.96 81 53 47 31 21 21 01	-1.32 -2.19 -1.67 -1.11 -1.99 80 51 33 22 12 0	4.52 4.55 4.55 4.17 4.15 69 56 30 00		16 17 20 16 15 09 05 01 03 06 08		.44 .20 .137 .05 .04 .05 .05 .05 .06 .08	.34 .25 .16 .13 .10 .07 .07 .06 .06		34   54   58   58   58   58   58   58   58   58

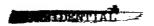


TABLE XIX.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000; PROPELLERS REMOVED - Continued (b)  $\alpha_U$  = 14°, 16°, 18°, 20°

	Per-								Lower surface						
Spanwise stations	cent chord				f attack						f attack				
0.10 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0	14° -e.26 -3.37 -e.38 -1.97 -1.40 -1.40 -1.84 -1.64	16° -2.97 -2.97 -2.20 -1.52 -1.52 -1.53 -1.66	18° 7.86 7.87 7.86 7.87 7.86 7.87 7.87 7.87	20° -1.54 -1.55 -2.33 -2.61 -2.11 -1.14 -1.14 -1.14 -1.14			0.50 .72 .62 .53 .50 .42 .39	16° 0.36 .73 .67 .58 .59	0.21 .73 72 .63 .58 .48 .47	20° 0.04 .69 .76 .87 .53 .51				
	70.0 80.0 90.0 95.0	58 55 52 51	58 55 51 50	85 74 64 55 53	96 84 71 60 57			.\$1. -50 .57	.41 .44 .54 .59	.46 .54 .61	.46 .49 .55 .63				
0.19 b/2	0 1.5 1.0 7.0 10.0 20.0 30.0 40.0 50.0 70.0 80.0 95.0	-5.43 -5.17 -3.57 -2.57 -2.57 -1.12 -3.80 -631 -631 -631 -631 -631 -631 -631	-6.86 -5.78 -2.36 -1.14 -1.14 -1.77 -1.54 -1.75 -1.74 -1.75 -1.74 -1.75 -1.74 -1.75 -1.74 -1.75 -1.74 -1.75 -1.74 -1.75 -1.74 -1.75	577777777 7777777777777777777777777777	-6.01 -2.83 -1.63 -1.63 -1.72 -1.43 -1.43 -1.43 -1.52 -1.43 -1.55 -1.48			.47 .76 .71 .60 .44 .38 .39	- 92 - 35 - 78 - 77 - 67 - 50 - 42 - 38 - 42 - 47 - 54	- 79 - 81 - 79 - 59 - 52 - 45 - 48 - 52	-91 -83 -83 -83 -73 -56 -47 -40 -44 -47 -54				
0.31 b/2	0 1.50 7.00 15.00	99.87 \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	19794444441111115858858658658658658658658658658658658658	5558513851533145885	5.59 5.50 5.50 5.50 5.50 5.50 5.50 5.50			12.63 - 70.638,50 - 14.1 - 59.59		-23 -65 -78 -73 -69 -59 -46 -14	.83 .76 .70 .60 .52 .46				
0.375 b/2	0 1.5 4.0 7.0 15.0 20.0 30.0 40.0 50.0 60.0 90.0 95.0	5.88 5.56 7.56 7.35 7.35 7.35 7.10 7.10 7.55 7.55	-6.11 -6.01 -3.36 -2.45 -1.97 -1.99 -1.04 -1.04 -1.02 99 84 81	\$33.92.84 \$5.92.84 \$4.4.11 \$4.4.5 \$5.99.89 \$5.99	-1.69 -2.11 -1.53 -1.45 -1.45 -1.45 -1.55 -1.99 -1.96 -1.99 -1.81			- 143 - 166 - 166 - 150 - 143 - 143	-55 -50 -66 -66 -60 -53 -15 -10 -14 -39 -50	7.46 7.66 57.9 1.14 39.50	-143 -51 -72 -69 -56 -50 -14 -45 -40 -51				
0.4 <b>4</b> b/2	0 1.5 4.0 79.0 15.0 90.0 50.0 50.0 70.0 70.0 70.0	+88 73 79 77 77 77 77 77 77 77 77 77 77 77 77	-3.18 -1.14 -98 -94 -94 -1.04 -1.04 -1.04 -1.04 -1.06 -1.04 -1.00 -1.04 -1.00 -1.04 -1.00 -1.04 -1.00	୫%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%				- 54 - 77 - 28 - 40 - 36 - 39 - 43 - 50	क्रिक्ट क्रिक क्रिक्ट क्रिक क्र क्रिक क्र क्रिक क्रिक क्र क्रिक क्	200 800 800 800 800 800 800 800 800 800	19.53 19.53				

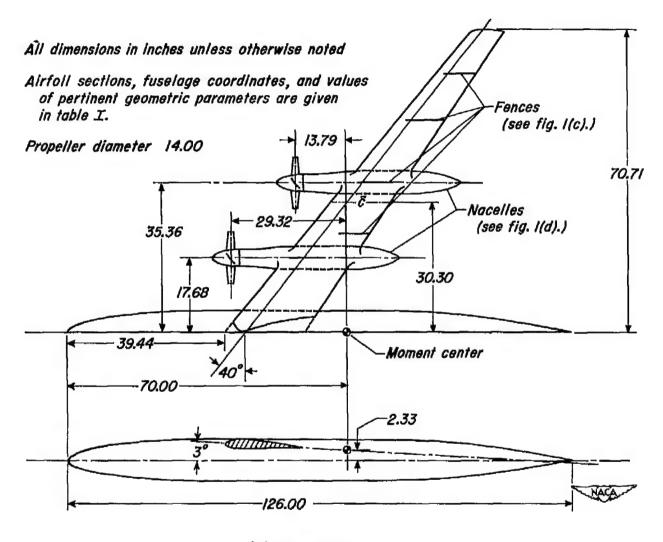




TABLE XIX.- PRESSURE COEFFICIENTS AT NINE SPANWISE STATIONS OF THE WING. M = 0.082; R = 4,000,000; PROPELLERS REMOVED - Concluded (b)  $\alpha_{\rm u}$  = 14°, 16°, 18°, 20° - Concluded

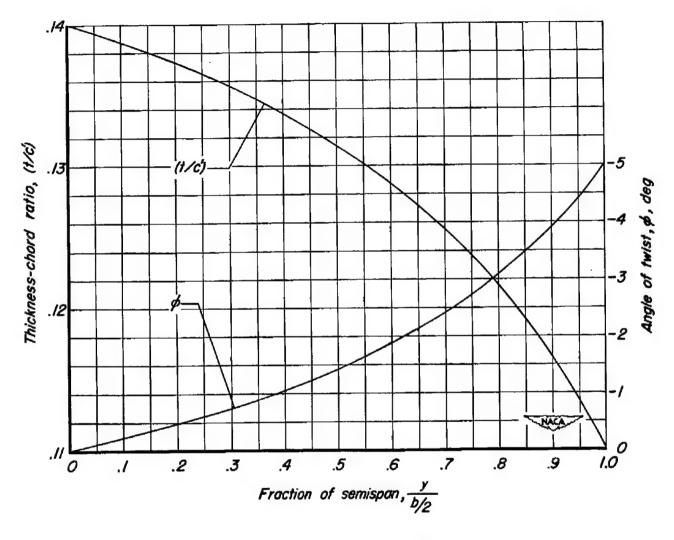
Spanwise	Per- cent chord	Upper surface							Lower surface					
		Angle of attack						Angle of attack						
stations		14°	160	180	20°			140	,16°	180	20°			
0.56 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	7.88 7.55 7.47 7.47 7.47 7.55 7.55 7.55 7.55	ण ३८५० १५५ १५५५ ५५५ ४५५५ ४५५५ ४५५५ ४५५५ ४५५५	+ 68 R2 18 8 17 8 17 1 1 1 1 1 1 1 1 1 1 1 1 1	5.65 5.65 5.65 5.65 5.74 5.74 5.74 5.74 5.74 5.74 5.74 5.7			0.15 .66 .63 .57 .50 .40 .33 .29 .01 .18	0,10 ,66 ,57 ,57 ,52 ,43 ,35 ,30 ,17 ,09	-0.06 .65 .62 .56 .46 .39 .33 .33 .38	-0.12 -65 -67 -71 -59 -19 -10 -16 -05 0			
o.68 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 95.0	57.79888835588244899 7179977771111111	%\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	385988558548888 19179977111111	5.38235.5244.2885.65333 9.11.11.11.11.11.11.11.11.11.11.11.11.11				-63 -57 -57 -57 -58 -39 -34 -25 -25 -25 -25 -25 -25 -25 -25 -25 -25	-99 .31 .57 .55 .51 .36 .26 .21 .17	59 .45 .56 .56 .51 .41 .35 .18 .13 .03 06			
0.80 b/2	0 1.5 4.0 7.0 10.0 15.0 20.0 30.0 40.0 60.0 70.0 80.0 95.0	547993339755455111	\$258882588838885 \$5799477711111111111111111111111111111111	6.70 4.50 4.50 4.50 4.50 4.50 4.15 5.50 6.50 6.50 6.50 6.50 6.50 6.50 6.5	-3.82 -1.46 -1.33 -1.33 -1.22 -1.33 -1.26 -1.35 -1.36			-11 -51 -53 .53 .47 .43 .34 -24 .20 .19 .14	- \$2 - \$4 - \$6 - \$0 - \$6 - \$8 - \$2 - \$2 - \$2 - \$1 - \$2 - \$2 - \$2 - \$2 - \$2 - \$2 - \$2 - \$2	48 . 46 . 59 . 52 . 48 . 40 . 26 . 24 . 18 . 11 . 04	-03 .57 -59 .52 .46 .35 -23 .17 .12 .05 06 15			
0.94 5/2	0 1.5 4.0 7.0 15.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0	-3.80 -3.21 -2.53 -2.65 -1.11 -1.06 -76 -33 -19 -106 -06	5.29 -3.99 -2.99 -1.34 -1.16 -3.59 -1.16 -1.15 -1.15	-5.18 -3.59 -2.60 -1.85 -1.45 -1.41 -97 -81 65 60 53 35	-2.29 -1.52 -1.18 -93 -86 -77 59 47 59 47 33				14 56 .53 .45 .37 .29 .20 .16 10 .05	77.546 .398.21 .16				





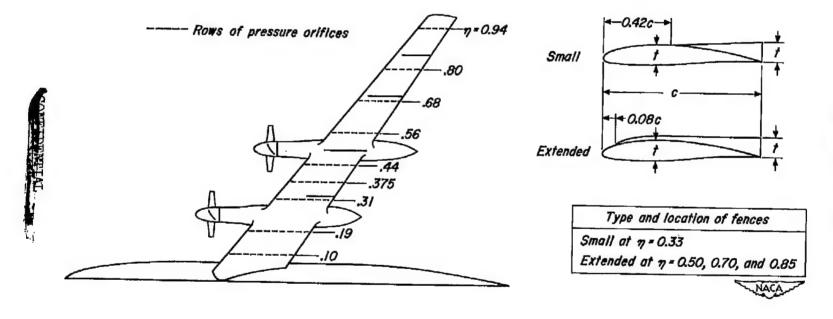
(a) Dimensions.

Figure 1.- Geometry of the model.



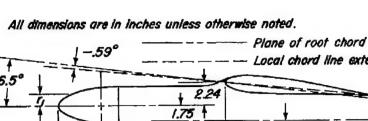
(b) Wing twist and thickness-chord ratio.

Figure 1.- Continued.

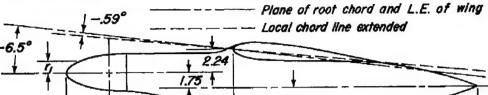


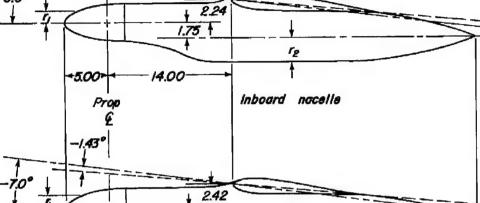
(c) Location of pressure-orifice stations and details of the four-fence configuration.

Figure 1.- Continued.

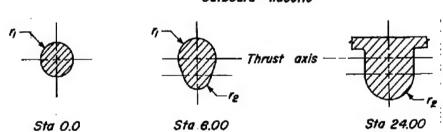


Sta 0.0





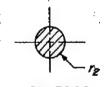
Outboard nacelle



47.25

Nacelle coordinates

71000110 000101170100											
Sta	1	Sta	12								
-500	0	2.00	0.350								
-4.79	.385	300	.419								
-4.58	.567	4.00	.6 <i>1</i> 6								
-4.25	.788	5.00	.919								
-3.95	.951	6.00	1.290								
-325	1.242	7.00	1.685								
-255	1.472	8.00	2.056								
-1.80	1.670	9.00	2.359								
80	1.871	10.00	2.556								
0	1.985	11.00	2.625								
200	2.100	30.50	2.625								
12.00	2.100	32.50	2.450								
!		34.50	2.220								
:		36.50	1.825								
1		38.50	1.270								
1	:	40.50	.675								
		41.50	.275								
		42.25	0								

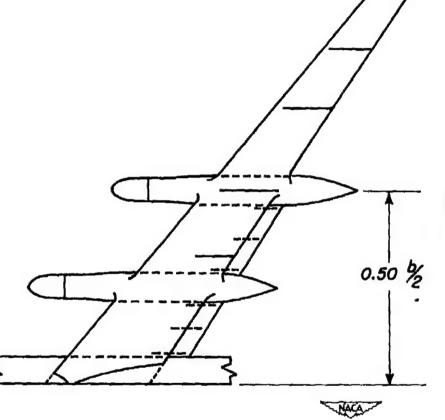


Sta 36.00

(d) Dimensions of the nacelles.

Figure 1.- Continued.

Typical section through flap and normal to reference sweep line



(e) Flap details.

Figure 1.- Concluded.

## COMPANY

## Developed plan form

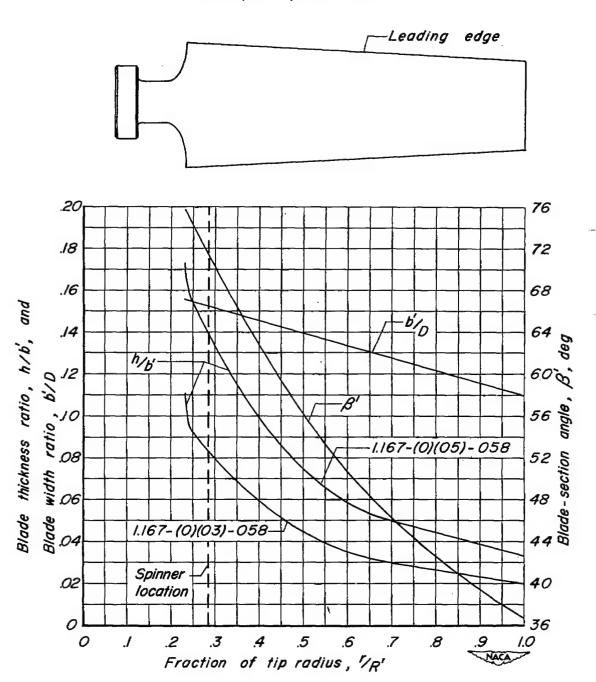


Figure 2.- Blade-form curves for the NACA 1.167-(0)(05)-058 and the NACA 1.167-(0)(03)-058 three-blade propellers.





A-17525.2

Figure 3.- Model mounted in the wind tunnel.



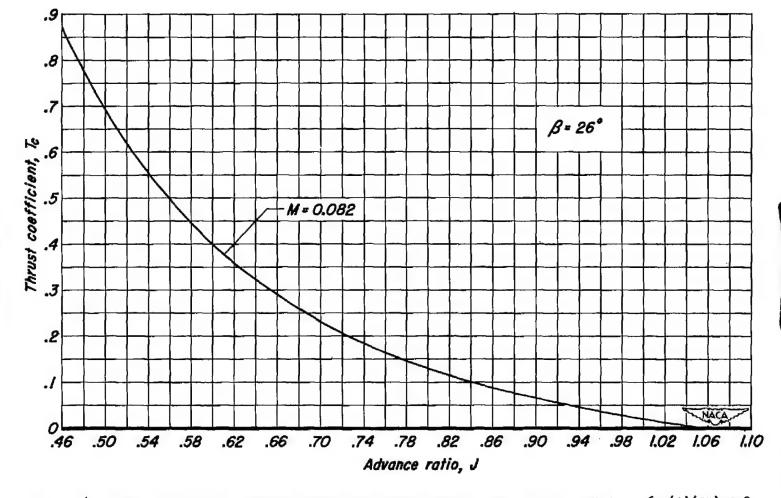


Figure 4.- The variation of thrust coefficient with advance ratio for the NACA 1.167-(0)(05)-058 propeller. Thrust axis parallel to the air stream. M = 0.082, R = 4,000,000.

NACA RM A53129



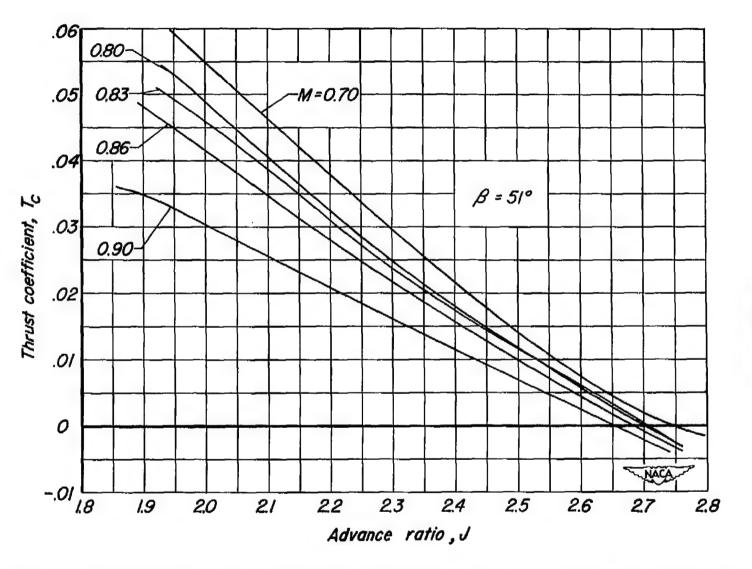


Figure 5.- The variation of thrust coefficient with advance ratio for the NACA 1.167-(0)(03)-058 propeller for several Mach numbers. Thrust axis parallel to the air stream. R = 1,000,000.

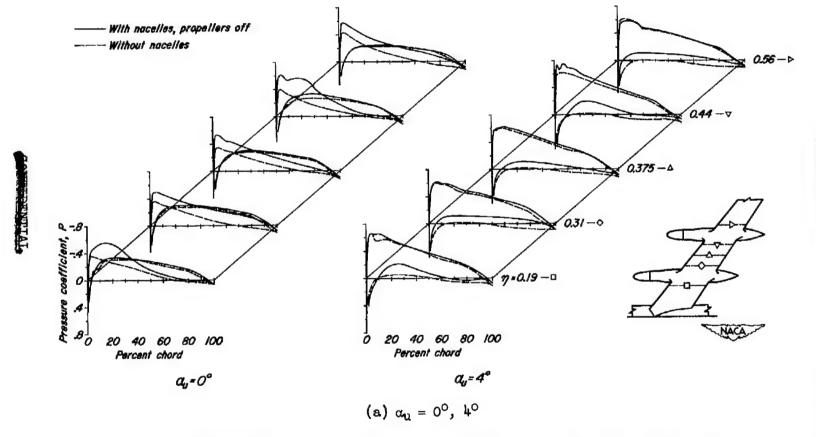


Figure 6.- A comparison of the chordwise distributions of pressure coefficient at five semispan stations of the wing for the wing-fuselage and the wing-fuselage-nacelles configurations. M = 0.165, R = 8,000,000.

i

. 5





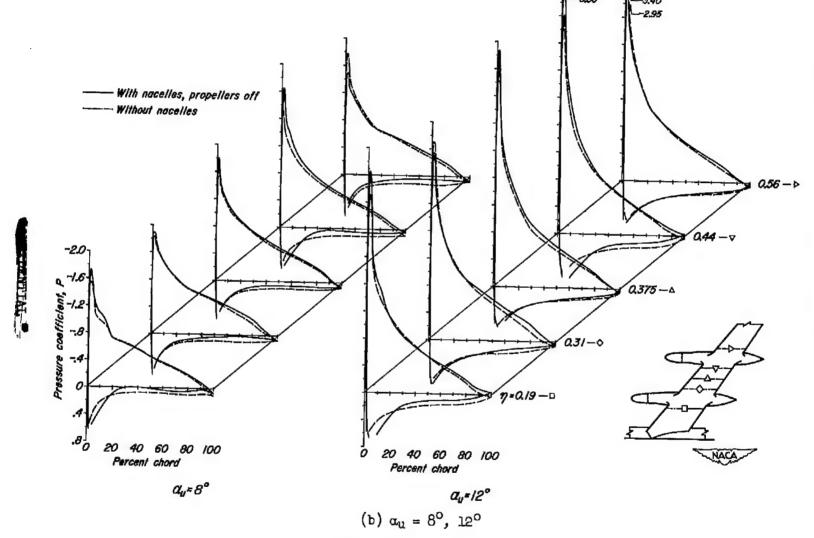


Figure 6.- Continued.



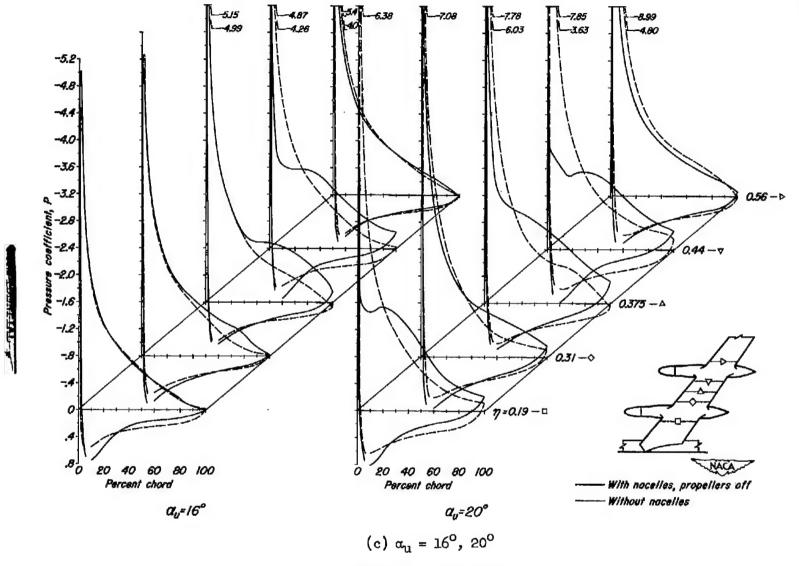


Figure 6.- Concluded.



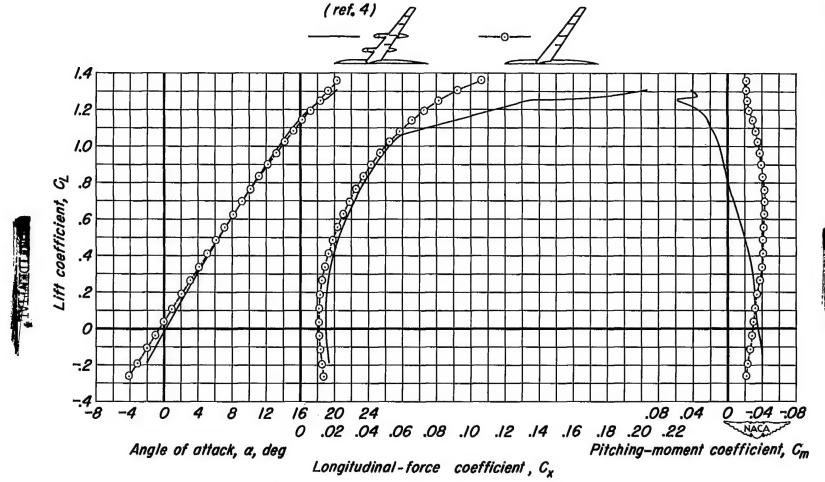
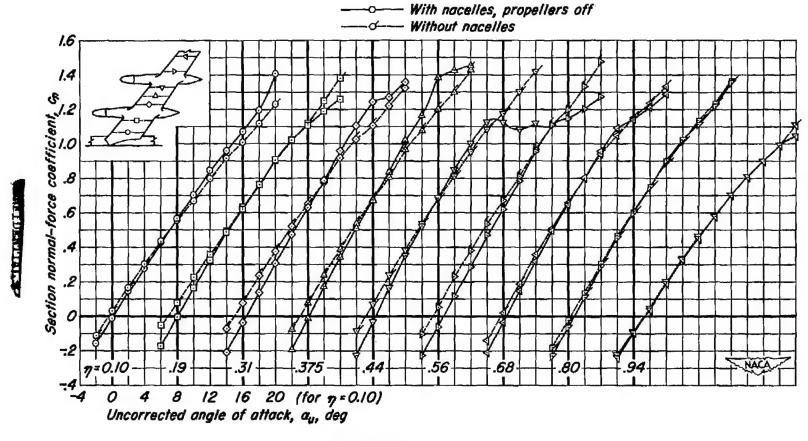
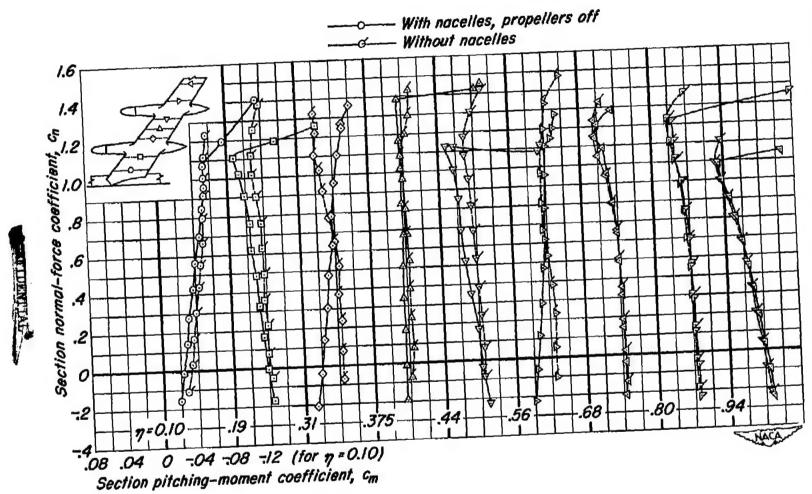


Figure 7.- A comparison of the aerodynamic characteristics of the wing-fuselage and wing-fuselage-nacelles configurations and their corresponding section normal-force and section pitching-moment characteristics at nine semispan stations of the wing. M = 0.165, R = 8,000,000.



(b) Section normal force.

Figure 7.- Continued.



(c) Section pitching moment.

Figure 7 .- Concluded.

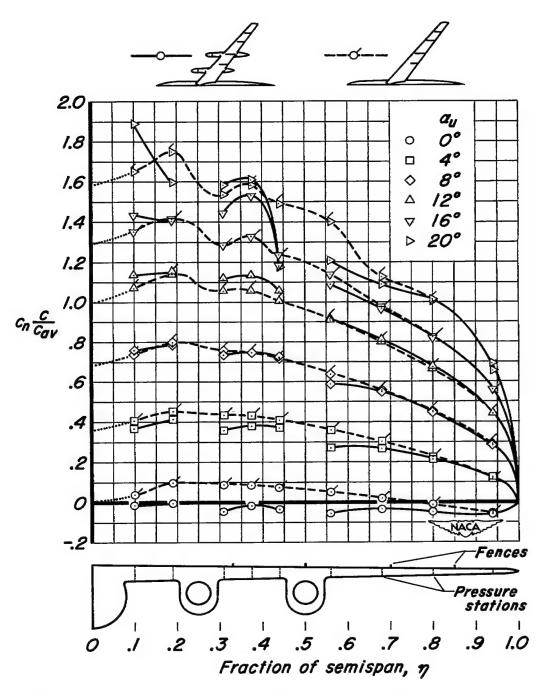
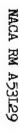


Figure 8.- The spanwise distribution of  $c_n \frac{c}{c_{av}}$  as affected by the addition of nacelles to the wing-fuselage combination for several angles of attack. M = 0.165, R = 8,000,000.







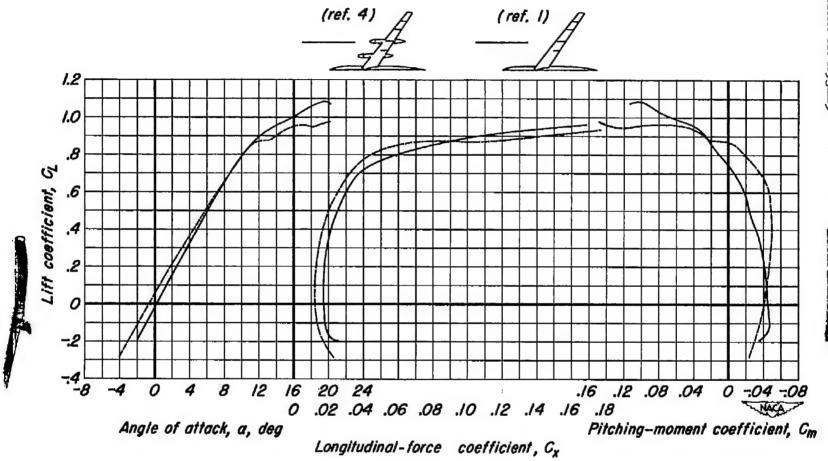
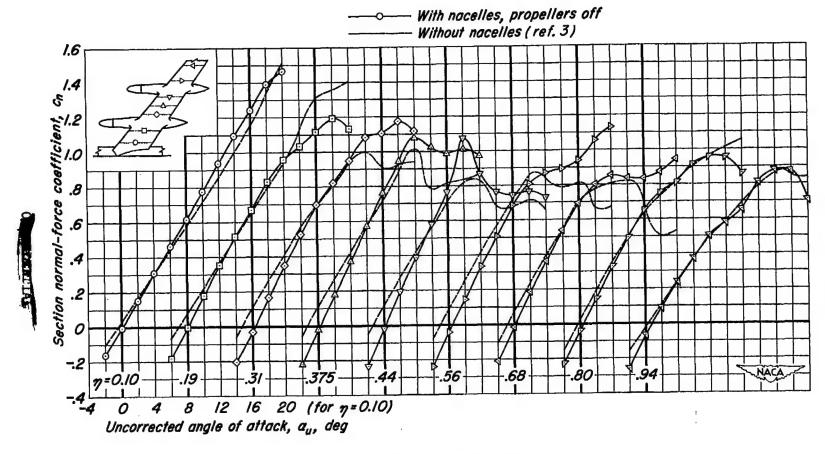
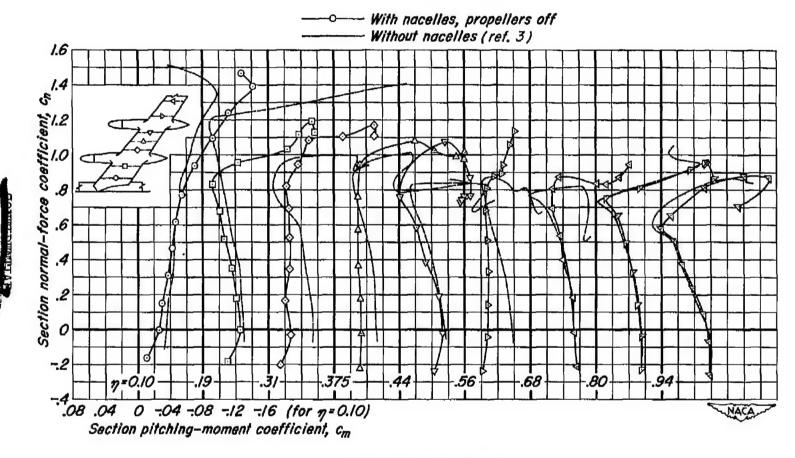


Figure 9.- A comparison of the aerodynamic characteristics of the wing-fuselage and wing-fuselage-nacelles configurations and their corresponding section normal-force and section pitching-moment characteristics at nine semispan stations of the wing. M = 0.60, R = 2,000,000.



(b) Section normal force.

Figure 9.- Continued.



(c) Section pitching moment.

Figure 9 .- Concluded.

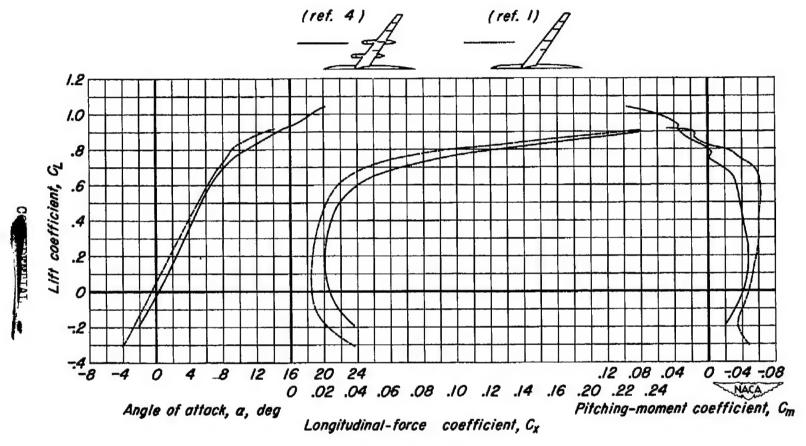
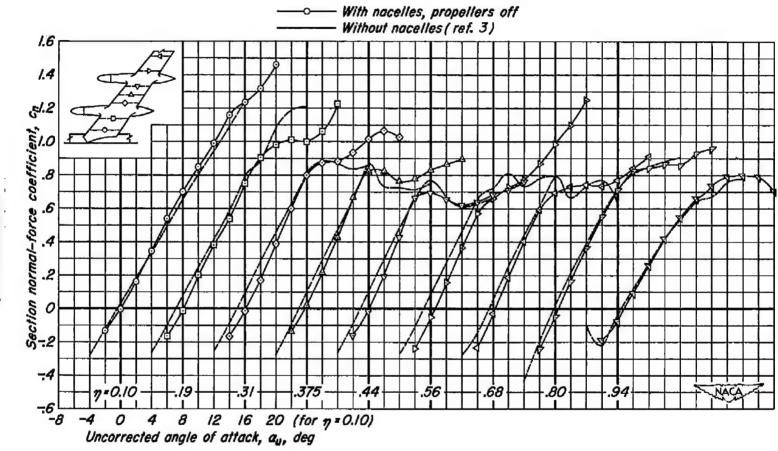


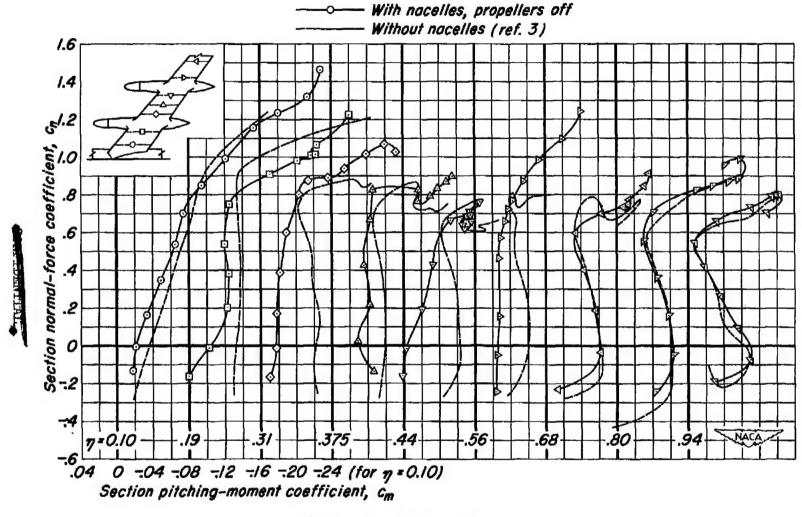
Figure 10.- A comparison of the aerodynamic characteristics of the wing-fuselage and wingfuselage-nacelles configurations and their corresponding section normal-force and section pitching-moment characteristics at nine semispan stations of the wing. M = 0.80, R = 2,000,000.





(b) Section normal force.

Figure 10.~ Continued.



(c) Section pitching moment.

Figure 10.- Concluded.

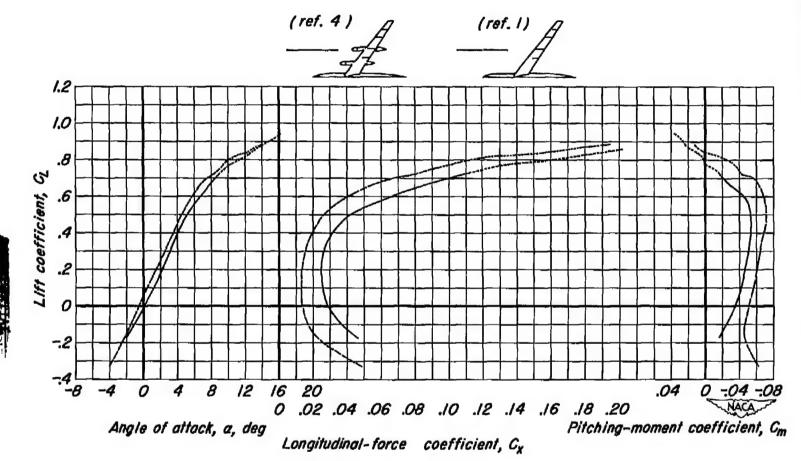
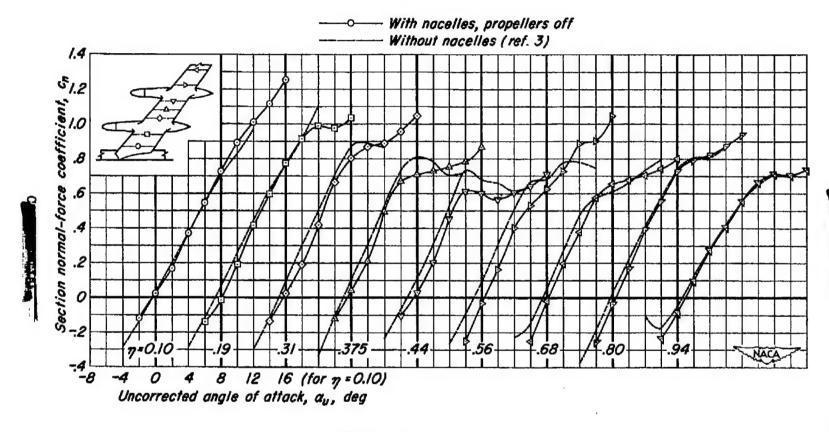
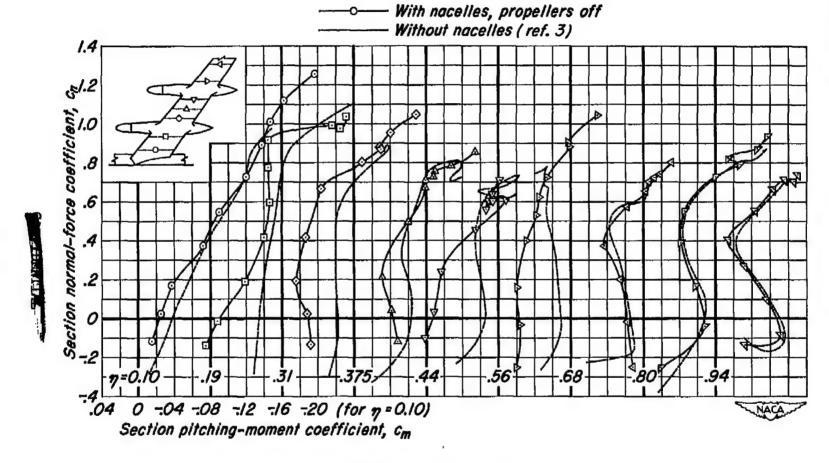


Figure 11.- A comparison of the aerodynamic characteristics of the wing-fuselage and wing-fuselage-nacelles configurations and their corresponding section normal-force and section pitching-moment characteristics at nine semispan stations of the wing. M = 0.86, R = 2,000,000.



(b) Section normal force.

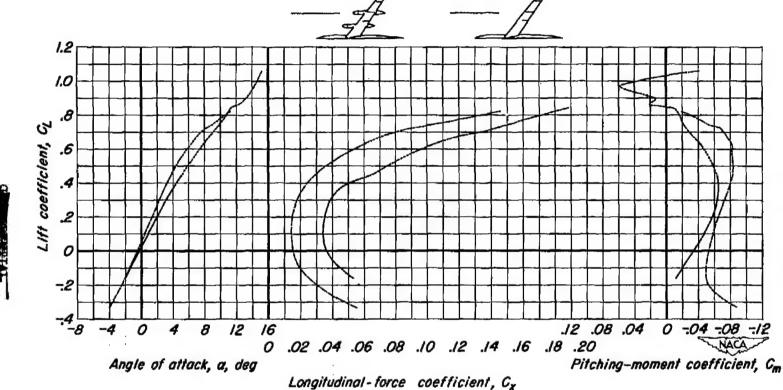
Figure 11.- Continued.



(c) Section pitching moment.

Figure 11 .- Concluded.

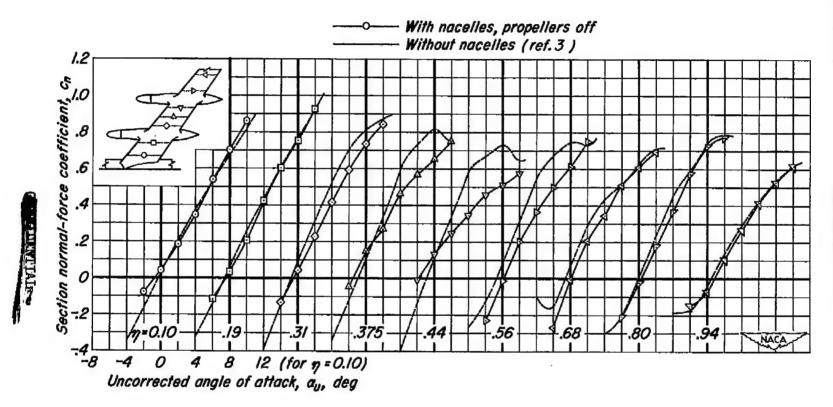
NACA RM A53129



(ref. 1)

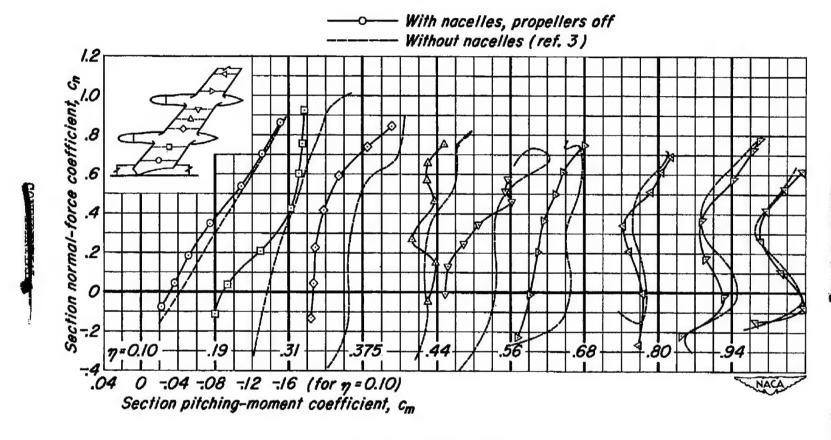
(ref. 4)

Figure 12.- A comparison of the aerodynamic characteristics of the wing-fuselage and wingfuselage-nacelles configurations and their corresponding section normal-force and section pitching-moment characteristics at nine semispan stations of the wing. M = 0.90, R = 2,000,000.



(b) Section normal force.

Figure 12.- Continued.



(c) Section pitching moment.

Figure 12.- Concluded.

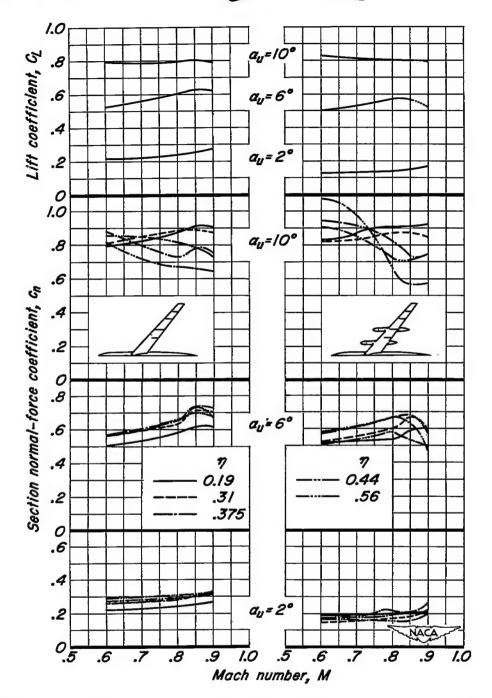
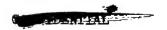
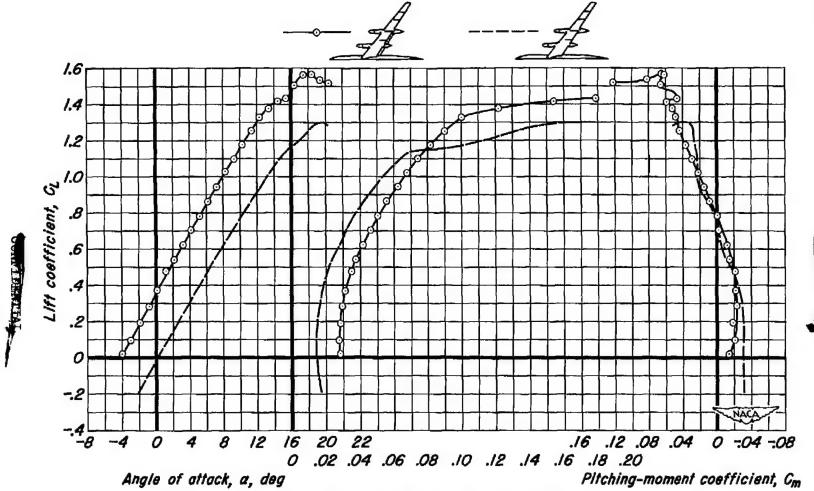


Figure 13.- The variations with Mach number of the lift coefficient and the section normal-force coefficient for several angles of attack of the wing-fuselage and the wing-fuselage-nacelles combinations. R = 2,000,000.

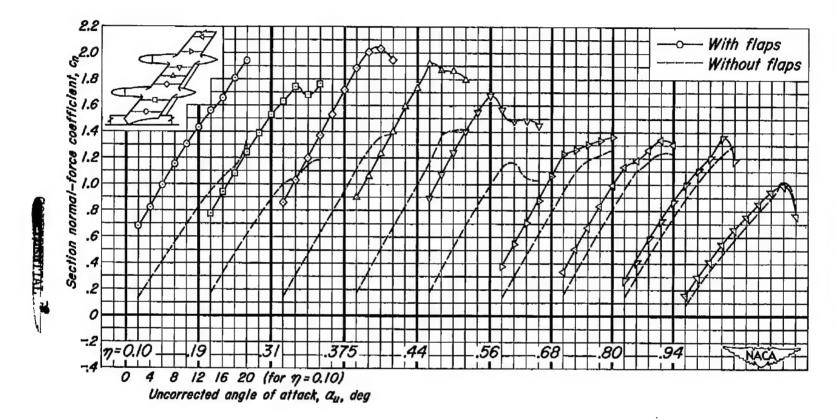






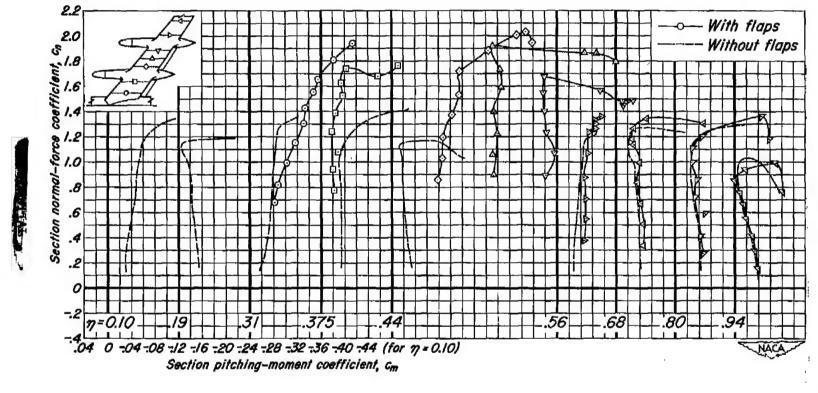
Longitudinal - force coefficient, C,

Figure 14.- The effect of flaps on the aerodynamic characteristics of the wing-fuselage-nacelles configuration and on the corresponding section normal-force and section pitching-moment characteristics at nine semispan stations of the wing.  $8 = 30^{\circ}$ , M = 0.082, R = 4,000,000.



(b) Section normal force.

Figure 14. - Continued.



(c) Section pitching moment.

Figure 14.- Concluded.

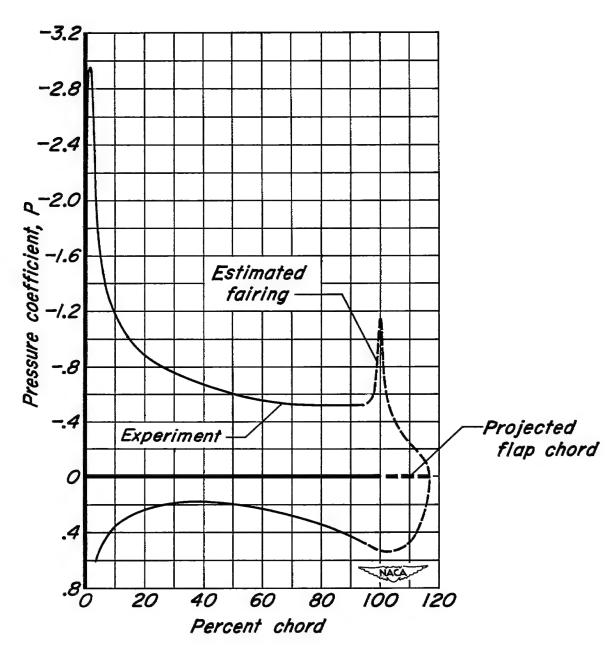


Figure 15.- Representative distribution of pressure coefficient for sections having a trailing-edge flap.  $\delta = 30^{\circ}$ , M = 0.082, R = 4,000,000.



Figure 16.- The effect of flap deflection on the spanwise distribution  $c_n = \frac{c}{c_{av}}$  for the wing-fuselage-nacelles configuration at several angles of attack. M = 0.082, R = 4,000,000.

Fraction of semispan, n





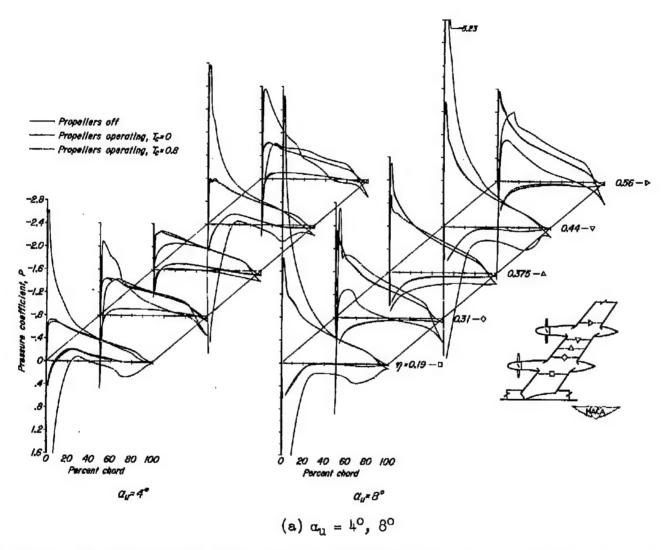


Figure 17.- The effect of increasing thrust coefficient on the chordwise distributions of pressure coefficient at five semispan stations of the wing. M = 0.082, R = 4,000,000.

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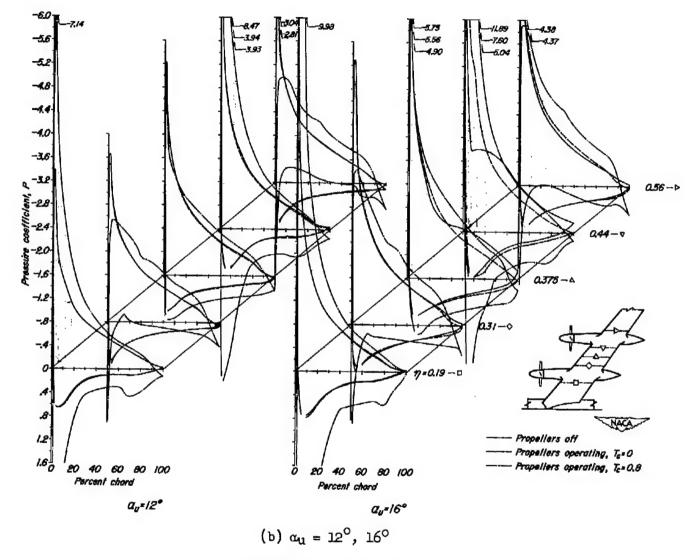


Figure 17.- Concluded.

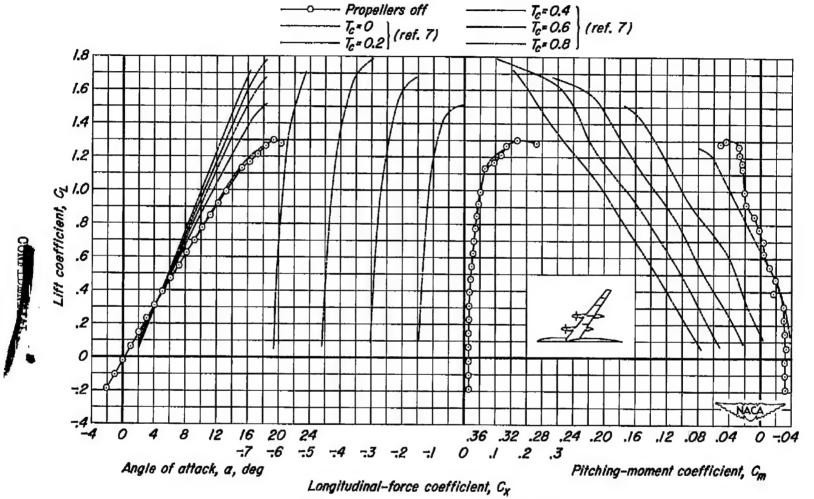
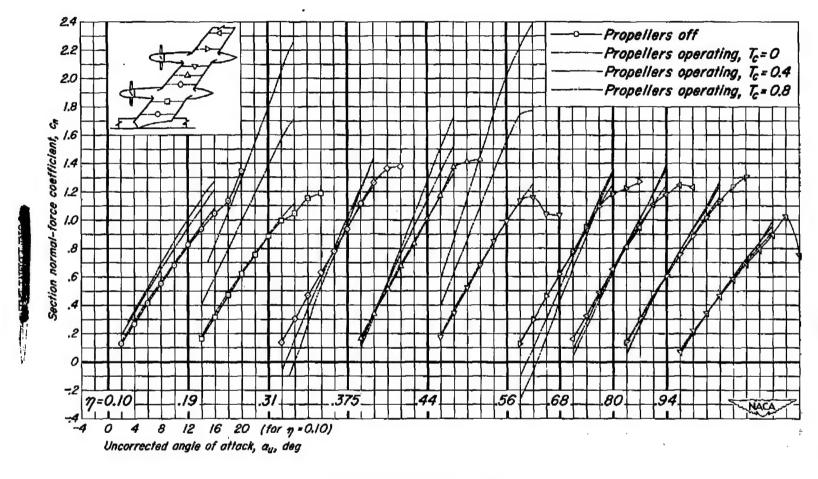


Figure 18.- The effect of increasing thrust coefficient on the aerodynamic characteristics of the wing-fuselage-nacelles configuration and the corresponding section normal-force and section pitching-moment characteristics at nine semispan stations of the wing. M = 0.082, R = 4,000,000.

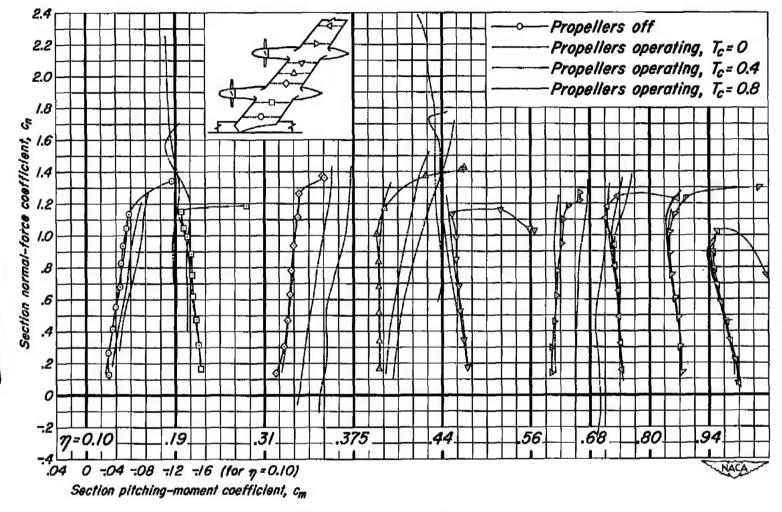
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(b) Section normal force.

Figure 18.- Continued.

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(c) Section pitching moment.

Figure 18.- Concluded.

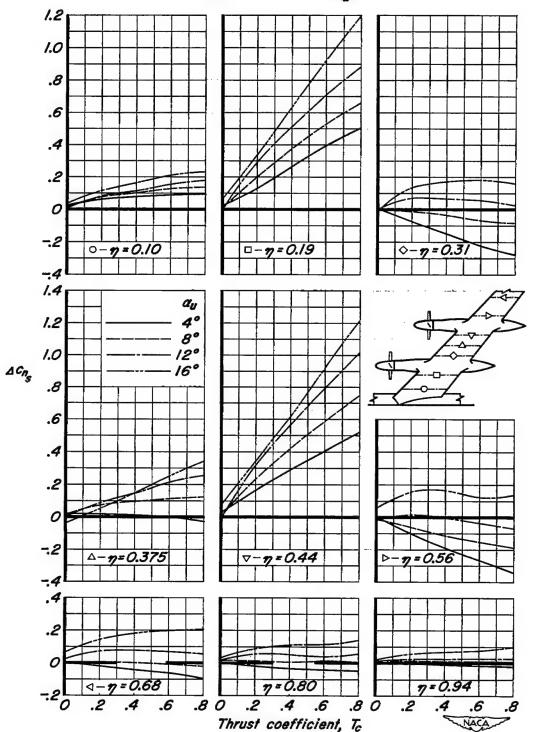


Figure 19.- The variations with thrust coefficient of the changes in section normal-force coefficient. M = 0.082, R = 4,000,000.



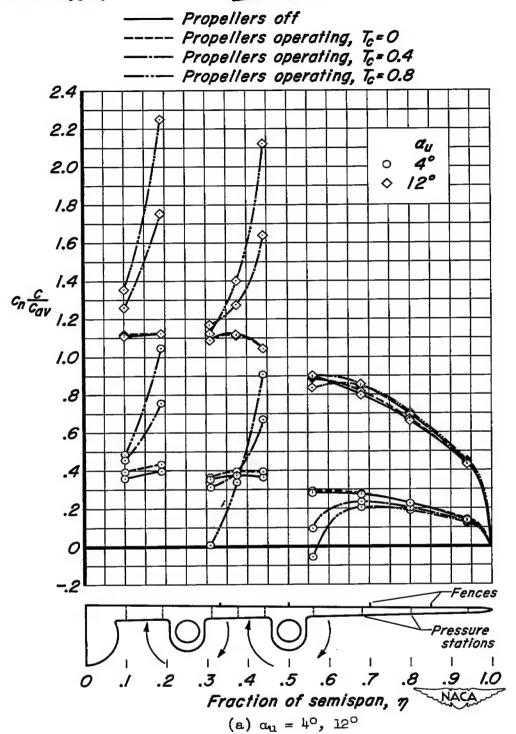
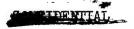


Figure 20.- The spanwise distribution of  $c_n \frac{c}{c_{av}}$  as affected by thrust coefficient for several angles of attack. M=0.082, R=4,000,000.



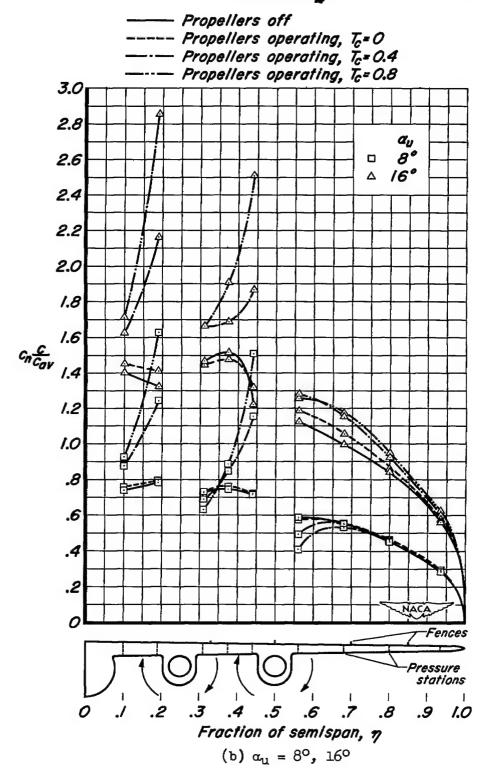


Figure 20.- Concluded.

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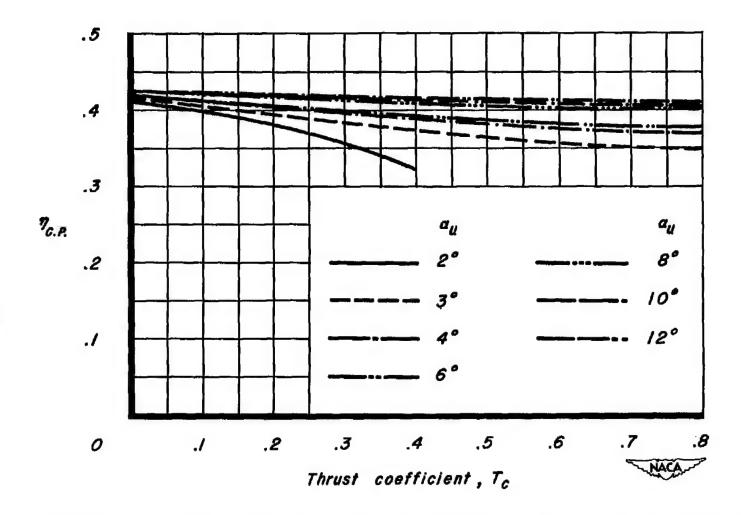


Figure 21.- The variation of the spanwise location of the center of pressure with thrust coefficient. M = 0.082, R = 4,000,000.

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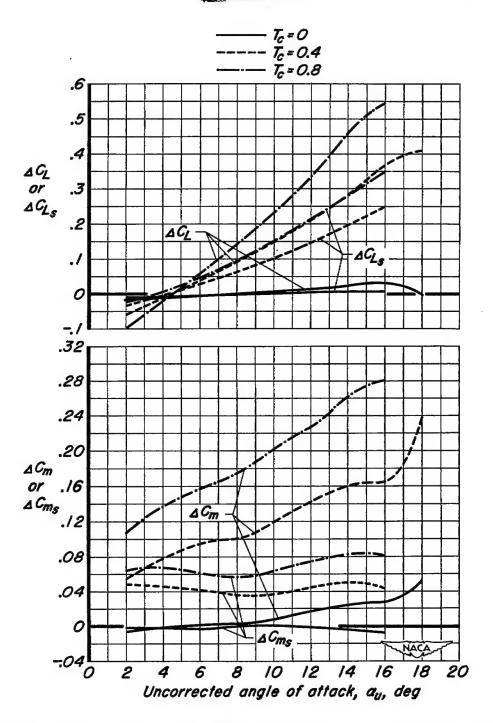


Figure 22.- The variation with angle of attack of the changes in the lift and pitching-moment coefficients due to increasing thrust coefficient and that due to propeller slipstream. M = 0.082, R = 4,000,000.





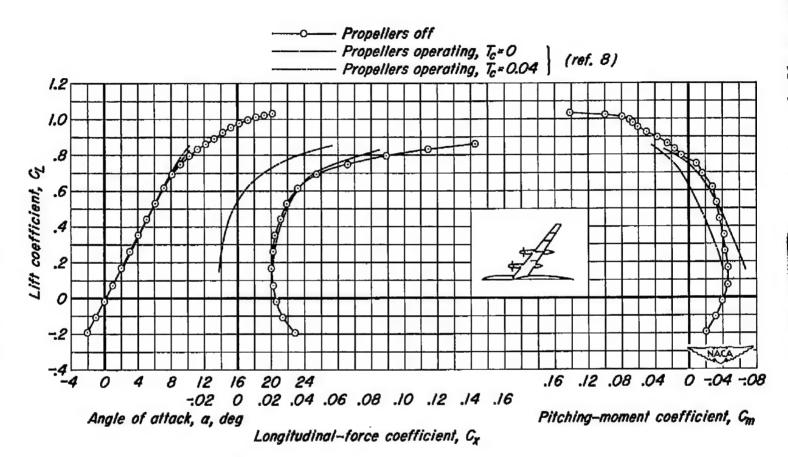
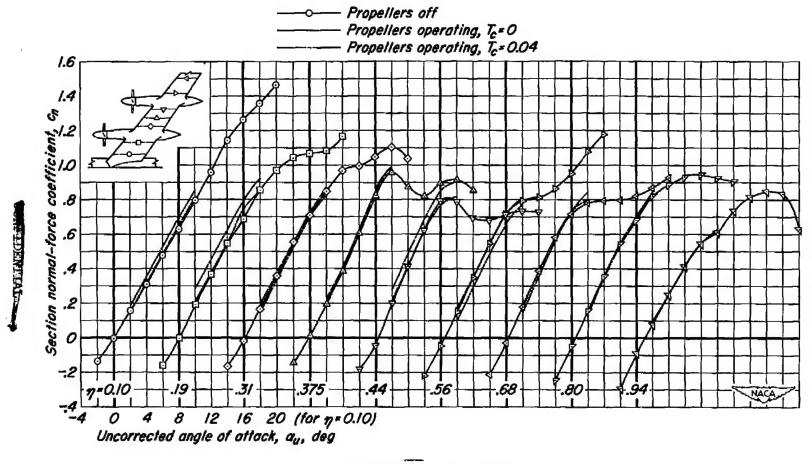


Figure 23.- The effect of increasing thrust coefficient on the aerodynamic characteristics of the wing-fuselage-nacelles configuration and the corresponding section normal-force and section pitching-moment characteristics at nine semispan stations of the wing. M = 0.70, R = 1,000,000.



(b) Section normal force.

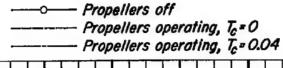
Figure 23.- Continued.

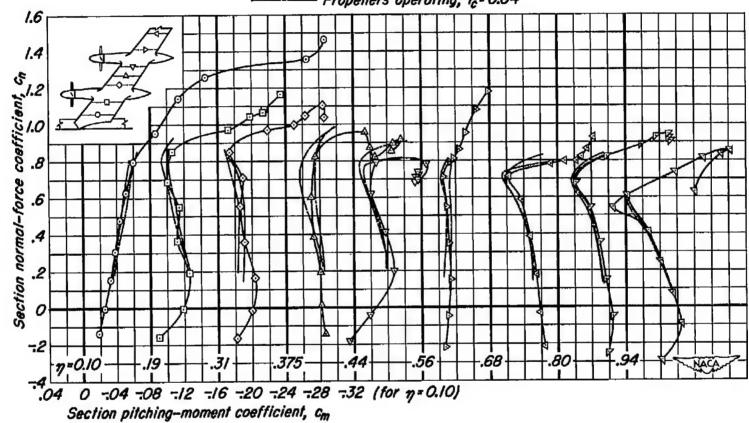
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(c) Section pitching moment.

Figure 23.- Concluded.

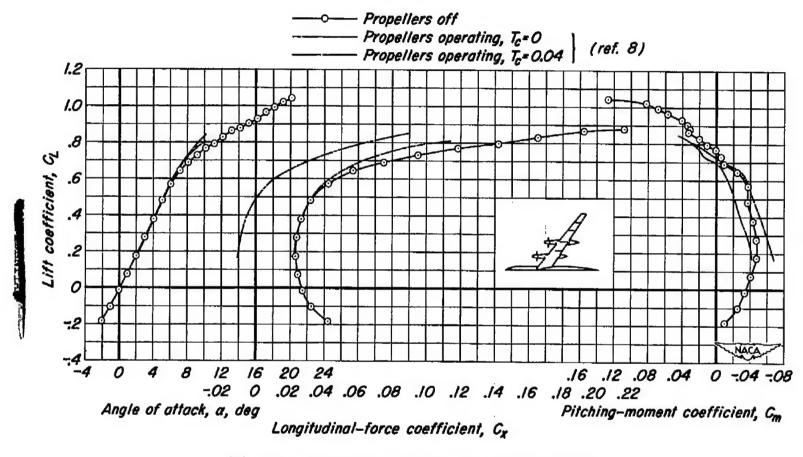
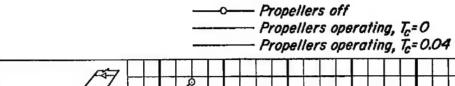
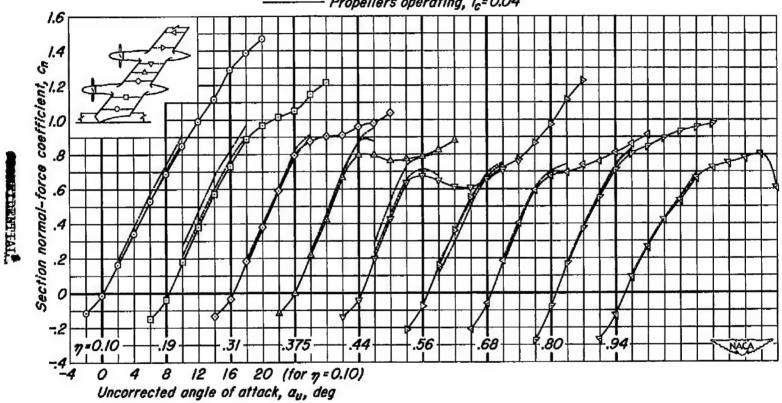


Figure 24.- The effect of increasing thrust coefficient on the aerodynamic characteristics of the wing-fuselage-nacelles configuration and the corresponding section normal-force and section pitching-moment characteristics at nine semispan stations of the wing. M = 0.80, R = 1,000,000.

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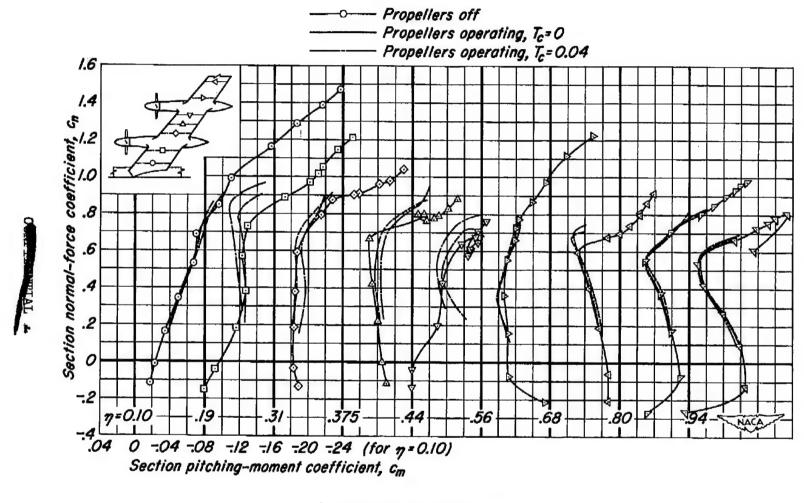
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(b) Section normal force.

Figure 24.- Continued.



(c) Section pitching moment.

Figure 24.- Concluded.

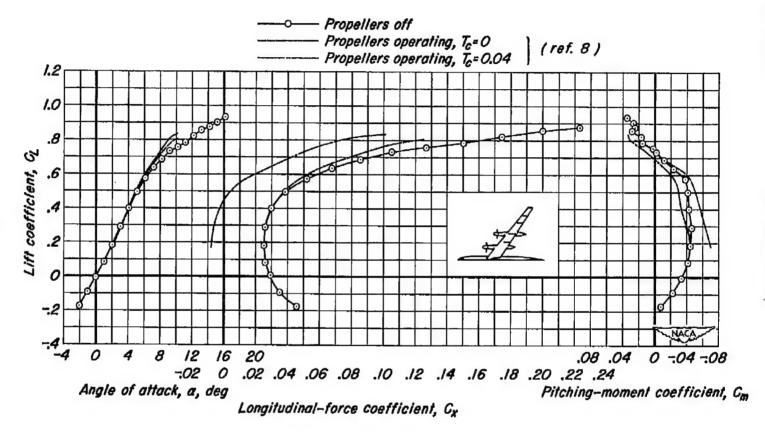
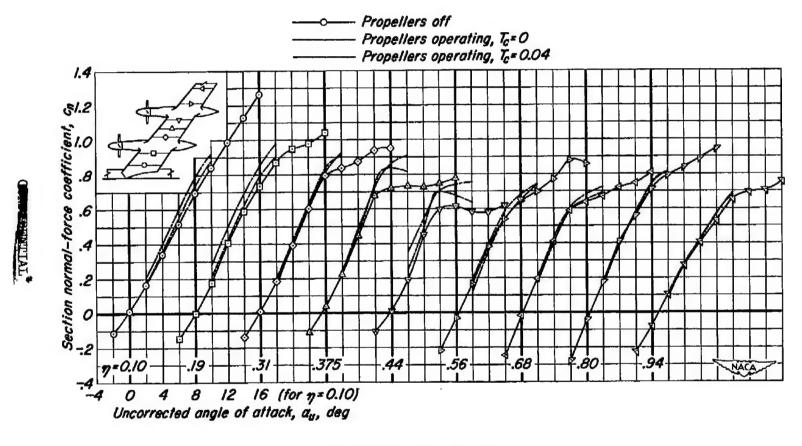


Figure 25.- The effect of increasing thrust coefficient on the aerodynamic characteristics of the wing-fuselage-nacelles configuration and the corresponding section normal-force and section pitching-moment characteristics at nine semispan stations of the wing. M = 0.83, R = 1,000,000.

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(b) Section normal force.

Figure 25.- Continued.

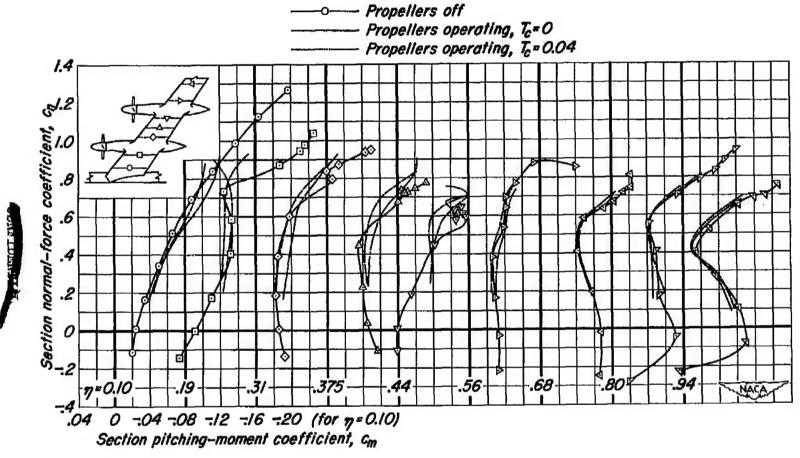
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(c) Section pitching moment.

Figure 25 .- Concluded.

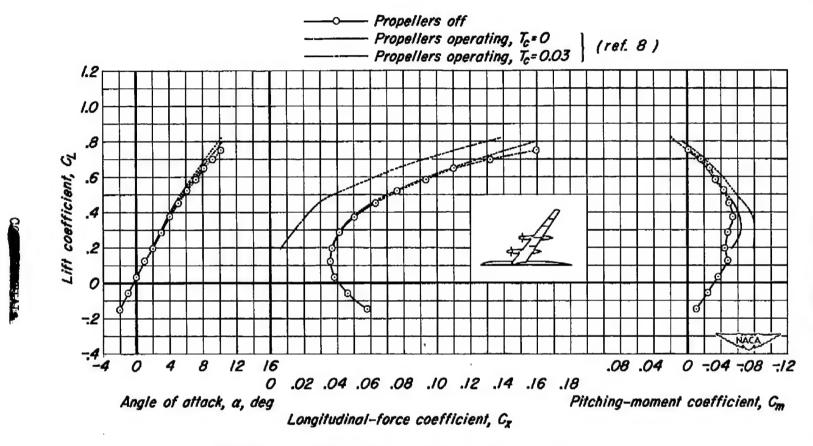


Figure 26.- The effect of increasing thrust coefficient on the aerodynamic characteristics of the wing-fuselage-nacelles configuration and the corresponding section normal-force and section pitching-moment characteristics at nine semispan stations of the wing. M = 0.90, R = 1,000,000.

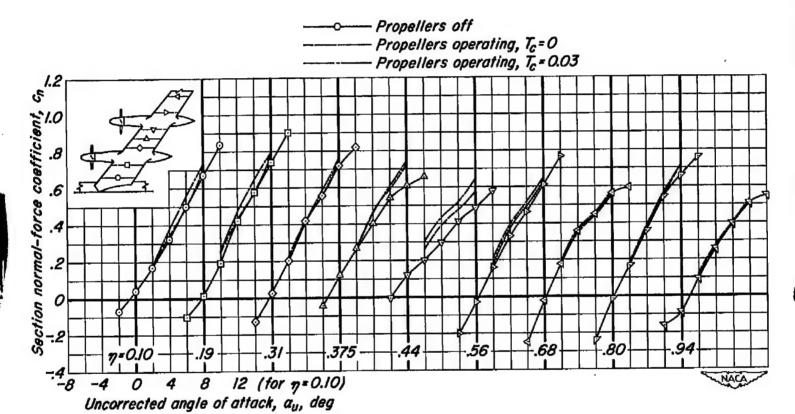
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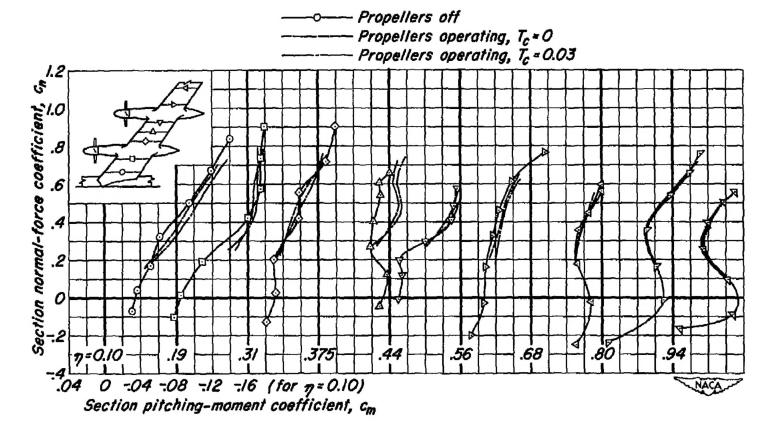
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(b) Section normal force.

Figure 26.- Continued.

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(c) Section pitching moment.

Figure 26.- Concluded.

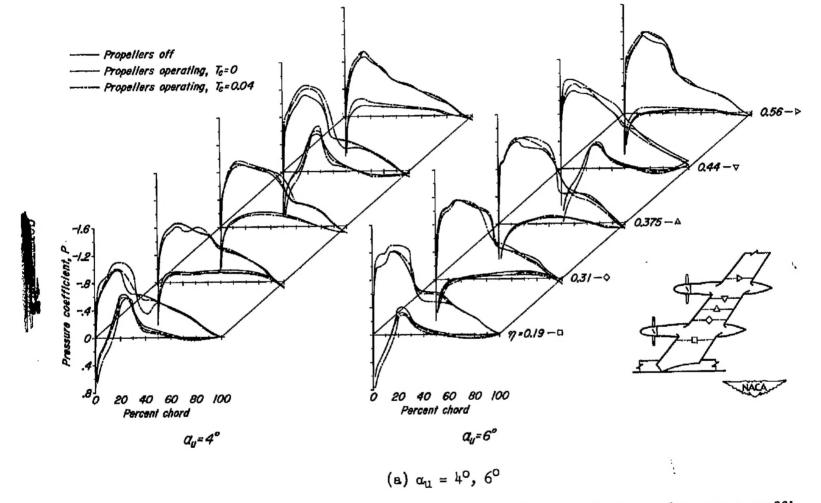


Figure 27.- The effect of thrust coefficient on the chordwise distributions of pressure coefficient at five semispan stations of the wing. M = 0.80, R = 1,000,000.

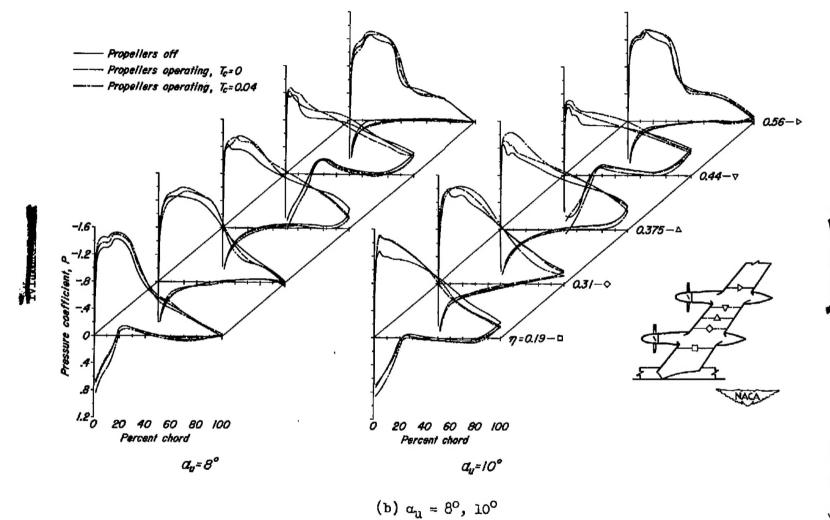


Figure 27.- Concluded.

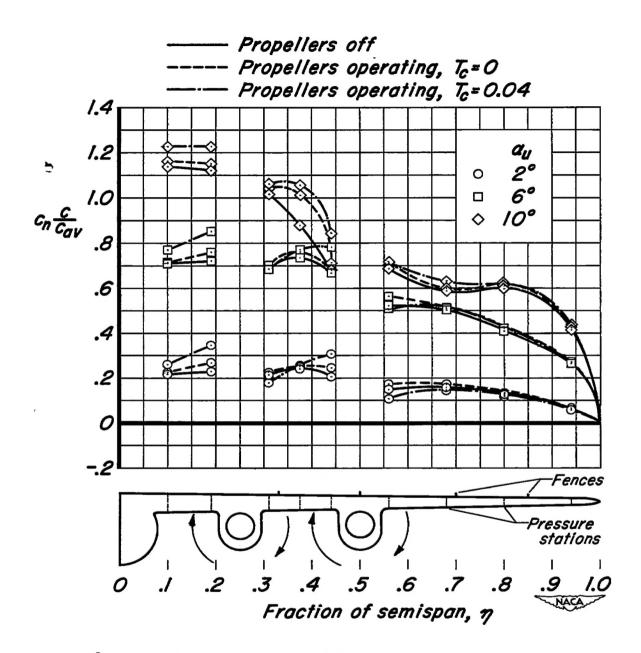


Figure 28.- The effect of thrust coefficient on the spanwise distribution of  $c_n \frac{c}{c_{av}}$  for three angles of attack. M = 0.80, R = 1,000,000.